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# NIGHTS WITH AN OLD GUNNER

AND OTHER STUDIES  
OF WILD LIFE

C. J. CORNISH





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# NIGHTS WITH AN OLD GUNNER

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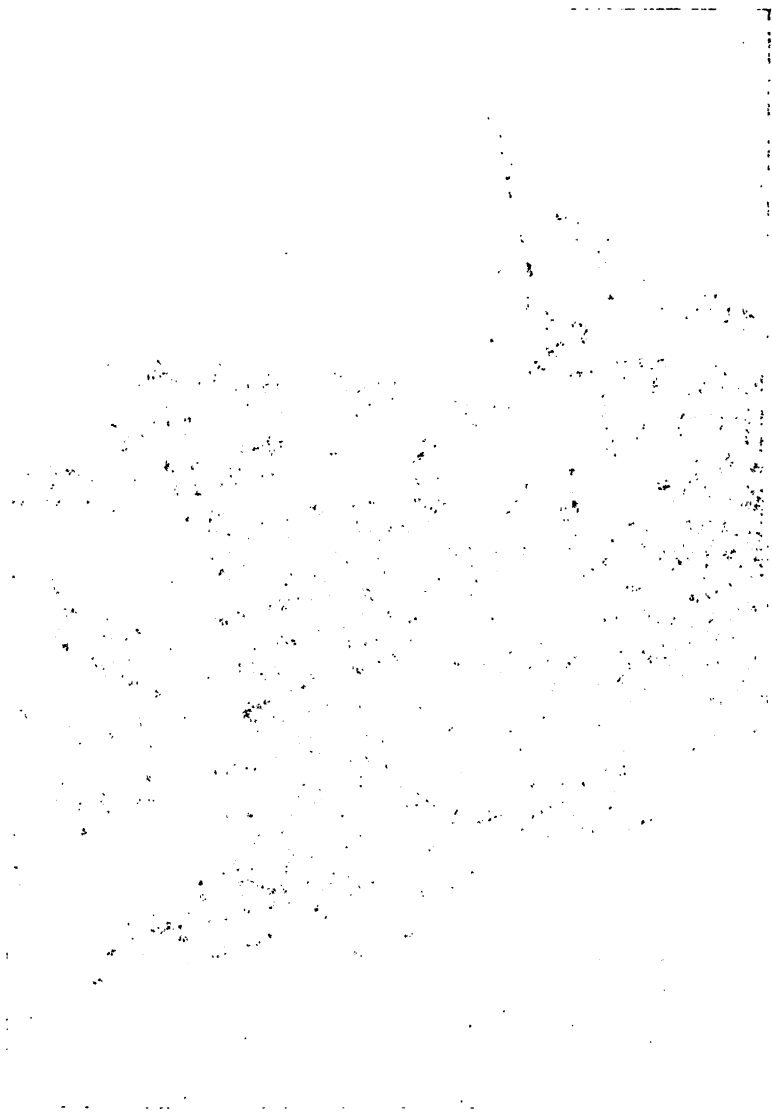
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STILL AN

OLD MAN

OF OLD LILL

1884



NEW YORK: THE UNIVERSITY OF THE STATE OF NEW YORK, 1917.

# NIGHTS WITH AN OLD GUNNER

AND

*OTHER STUDIES OF WILD LIFE*

BY

C. J. CORNISH

*Author of 'Life at the Zoo,' 'Wild England'*  
*'Animals at Work and Play,' Etc.*

*WITH ILLUSTRATIONS*

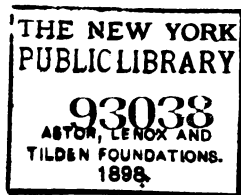
LONDON

SEELEY AND CO. LIMITED

38 GREAT RUSSELL STREET

1897

a "a"



TO MY FATHER,  
THE REV. C. J. CORNISH, OF CHILDREY, BERKS,  
WHO EARLY TRAINED HIS SONS TO THE ENJOY-  
MENT OF OUTDOOR LIFE AND FIELD  
SPORTS, THIS BOOK IS  
DEDICATED.



## PREFACE

THE contradiction involved in a liking for field sports and a taste for observing wild animals in their hours of ease is an obvious one. But in such byways of sport as are mainly recorded here, phases of animal life are noticed at hours during which the creatures would otherwise not be seen, as, for example, throughout the winter nights when the 'Old Gunner' has kept watch for more than half a century on the marches, or at daybreak among the reefs where the 'Lobster Hunter' makes his daily search.

My thanks are due to the Editors of the *Spectator* for permission to republish the bulk of the papers included in this volume; also to the proprietors of *Country Life Illustrated*, and to the proprietors of the *Cornhill Magazine*, and

Review. 9 Dec. 97. 4/6.



of the *Badminton Magazine*, in the former or which the 'Making of a Paradise' appeared by the suggestion of its Editor, while the latter first extended a welcome to the 'Old Gunner.'

C. J. CORNISH.

ORFORD HOUSE, CHISWICK,  
*September 1897.*

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## NIGHTS WITH AN OLD GUNNER

A



## THE OLD GUNNER OF HOLKHAM BAY

ON the jut of the Norfolk coast which runs due east from Hunstanton to Cromer is a tract of shore unlike any other on the English seaboard. From Holkham Bay to Blakeney Tower the land has, in the course of a few centuries, gained as much from the shallow northern sea as it has lost where the coast once more faces eastward. In place of lost towns and submerged churches, there extends, as far as the eye can reach, a wide fringe of salt marsh, protected from the sea, first by an ever-growing barrier of sandhills, and secondly, by an out-work known as the 'High Sand,' an immense sandbank, rising like the back of a sole, uncovered, except at high tide, studded from mile to mile with ancient wrecks, and the nightly resting-place of the celebrated wild grey geese of Holkham, which come there yearly in October from the Lapland marshes 'to pay their rents,' as the fishermen say, for last year's food and lodgings. The inner tract of marsh, between the sandhills and the original line of shore, has been reclaimed along the



whole face of the Holkham estate, as far as the mouth of Wells Harbour. Thence it stretches eastward in an apparently limitless plain, not of mud or sand, but of land almost reclaimed by nature, covered with thousands of acres of sea-lavender, crab-grass, rosemary and samphire, intersected by creeks, large and small, which figure on the map much as the arteries of the body do in an anatomical drawing, and cut by one or two deeper channels, running up from Wells Harbour, which are navigable by boats at high tide. The high springs, or 'marsh tides' as they are locally called, occasionally cover these flats. But the whole expanse offers a feeding-ground and resting-place for wild fowl almost unequalled in England. The sands and the muds outside the sandhills are visited in winter by thousands of stints, knots, curlews and grey plover, and the marshes inside the 'hills' are by night the feeding-ground of all the wild fowl which rest by day on Holkham Lake, while redshanks, green plover, golden plover and curlew haunt them at all hours.

It can scarcely be matter for surprise that these marshes, which are so attractive even to the stranger who visits them for the sake of sport or natural history, are regarded with an almost passionate attachment by the 'gunners' who have spent all their lives upon their borders. They eagerly welcome the chance of a whole day upon the marshes as an agreeable change

from their daily work of mussel and cockle fishing, and their keenness to do the honours of their native marsh to a stranger is as great as that of any great proprietor to show sport to his guests in his fields and covers.

My first visit to this delectable land was made with the object of seeing, and perhaps shooting, some of the wild geese on their morning and evening flight from and to the great sandbank. For guide and attendant I had an old 'gunner' who by general consent had a more intimate knowledge of the methods and history of wild-fowling in these marshes, and of the habits of the creatures which frequent them, than any man now living upon this coast. His back was bent from long nights spent sitting in 'duck-holes.' He knew the effect of every shift of wind and weather on the fowl, the devious ways and paths across the marshes, and the hours at which the creeks could be crossed at all states of the tide. His keenness for the sport was inexhaustible, as the following anecdote shows. He is an adept at 'calling' the different shore birds, and in the earlier part of the season can whistle single golden plovers and curlew down from the sky with an art which looks like magic. On one occasion in September he called a single golden plover, which descended from a great height and alighted within twenty yards of a party

who were lunching in the sandhills. But he was so unfortunate as to lose a front tooth, and found that he could 'whistle' the birds no longer. This was not to be borne, so he extracted (with his knife) the corresponding lower tooth, in the hope that he would whistle as well as ever if he 'made things ship-shape.' The result of this experiment was that he could not whistle at all. So he contrived a stopper of tin which could be adjusted to fill the gap, and, thus equipped, found that he could once more practise his lost art.

Our 'wild-goose chase' presented more than the usual difficulties. At night they flew back too high over the sandhills for a successful shot. In the early mornings the winds were light and adverse, and the weather clear. But, like Charles St John's keeper Donald, the old man had set his heart upon our shooting a goose, and was determined that no slackness on our part should be encouraged.

Each night he appeared, nominally for orders, really to give them, and then discoursed in fluent East Anglian phrase on the whole duty of the wild-fowler.

'I ha' brought some swan-shot up to load a few of your cartridges for them geese we're a-going after in the morning,' he would observe, on entering the inn parlour after dinner had been removed.

'Oh, we are going after them, are we?'

'You *must*; can't you hear the wind? That's blowing half a gale from the west'ard, and them old geese, when they come o' the morning, they're bound to fly low. I lay a penny they'll come straight in past the beacon, and in over them highest sandhills. That's where we're bound to be afore light if the wind don't shift. Like as not that'll blow harder then. You'll come all the same if that snow or rain? Then I'll call you at half-past five. Dark? no; that o'ont be dark—not dark enough to si'nify. That's never rightly dark unless there come on a thick' (a fog). 'Moonlight nights on the marshes, I've known when that looked as light as day. But that isn't. I never cared what time that was when I was out, whether that was day or whether that was night; and I've set out in "duck-holes" all hours and and all weathers. But moonlight nights are the curousest. The birds can see; you can't see, or not a quarter so much, or see things wrong; and though they can see everything else, there is just one thing they can't see, and that's *you*. Anyway, if you keep still they don't pay no regard to you—not no more than if you was a piece o' wreck—not so much sometimes, for they'll a'most walk over you.

‘I was setten one night in a “duck-hole” near where that goose-net stands, just off the hills. That was bright moonlight, half-full. Two stints come flying along over the mud, and lit down against me, on the edge of the hole, and I caught one with my hand.

‘I said to the man who was with me, setten in another hole close by, “Gracious heart now me, what do you think I done? I caught a stint with my hand, and very near had the other!”

‘When we dig a duck-hole that fare as if the birds like to come and see what it is, and often they won’t mind you a mite—not if you keep setten still. When you dig one of them holes, you go and gather two or three armfuls of marrum grass, and put that in the hole to set on, and be comfortable and dry. When I’ve been set there I’ve had an old owl<sup>2</sup> pitch in by me and stop so, pricked up upon the marrum. So I have seen them when first I come to the hole, setting pricked up upon the seat where I was a-going to sit. Old brent geese, too, will get into the holes, and set on the dry marrum where you laid it.

‘One night I had forty or fifty of the grey geese come walking and talking within twenty yards of me. They were all scattered about, not arranged anyhow so

<sup>2</sup> Short-eared owls, which are very common along the marshes and sandhills, where they alight after their flight across the North Sea.

as I could shoot along the "ringe," and I kept waiting till they got nearly too far to shoot. Then I only got a couple.

'Moonlight nights I was waiting for them knot, when a brace of widgeon dropped right into the hole where I sat. *They* didn't stop to shut the door before they were off! Another night I found the hole I had dug was full of water, so I made another alongside of it. While I sat there two mallards flew up behind me, and dropped slap into the water-logged hole that was a little behind me, and I had to turn round to shoot. My heart went thump! thump! thump! as I waited for them to come out of the hole, for the water wasn't up to the top, and I couldn't see *them*, and they were so close under the side that they couldn't see *me*.

'At last I crawled out, and up they got, but I never killed but one.

'Old Jimmy Catchpole and I sat out one very sharp night by the edge of the long sand. The tide was too high to dig a deep hole, but Jimmy scraped out a "laying-hole," and lay there on his back, just so as his head and body were level with the sand, but his feet and legs lay out. He allus swear an old mallard drake come and washed the'self and cleaned the'self between his two feet. That night, while I lay there on my back, a mallard come walking past me not four yards off. I had the gun lying with the muzzle resting on my toe,

down along my leg.<sup>1</sup> Thinks I, "I'll take yar head off," for that was too near to shoot it anyhow else. I fired, and that lay on the grouud. But when I come to pick it up, it wasn't touched by the shot, though it was as dead as a herring. Not a drop of blood anywhere. That must have been killed by the wind of the charge just over its head.

'Well, while I ha' been talking I ha' filled these dozen cartridges with swan-shot, and these others with B B; and if we don't kill one of them old grey geese in the morning, they'll have sore bones anyhow.'

<sup>1</sup> This, though apparently an awkward pose, is the orthodox attitude when lying-up for fowl in the open. It is also used by the Boers when shooting buck on the veldt.

## THE OLD GUNNER OF HOLKHAM BAY

*(Continued)*

PUNCTUALLY at half-past five next morning the rattle of gravel against the window aroused us from bed, and a brief interval saw us tramping by starlight over muddy roads towards the sands of Holkham Bay. As the dawn cleared the way for daylight, across the marsh the geese came in in lines and companies from the High Sand. Flock after flock passed over, with steady, even flight and flute-like calls. But the gale had dropped, the lightening sky was cloudless, and though our shot could be heard rattling on the feathers of the geese, the elastic cuirass of down saved them from injury. We were consoled by the beauty of the dawn on the marshes and the walk home in the fresh winter morning between the sandhills and the sea. Not so our guide. He felt that his reputation was at stake. In the evening he once more appeared, to urge us to further enterprise by tales of the shore and marsh.



all that charge of shot went between my back and the bag. I felt so bad that I lay down for ten minutes, and then I walked off home.

‘Only once I came near to bringing a man into real danger.

‘I was out by night in a gunning punt, and a young fellow who was “in Co.” with me, and I heard those old grey geese “talking” on the sand. The tide was high, and we thought we could get right into them.

‘I said, “Whatever you do, do you keep me in sight. We will work up together, and pull when I flash a match.” Well, we sat up, but he got separated, though I knew he must be pretty close by, because we could see the line of the sand, and hear just where the geese were “talking” on the edge. There they set gabbling and splashing, though I couldn’t quite see them. Then I made out a body of them to the right, so I backed my paddle and looked along my big gun to see how to take them. They seemed a bit too quiet for geese. Then I thought it was a piece of wreck, but I couldn’t see any break in the line of it. However, I see it move, so thinks I, “Well, here goes,” when part of a cloud cleared off from the moon, and there lay his punt, with him in it. Another two seconds, and I should have killed or sunk him. Instead, I backed my other paddle,

and, without waiting for him, I had a good rake at the geese, and shot four.'

Wild birds were not the only creatures which fell to the old man's gun at Wells. Seals used to visit the harbour from time to time, and were often shot before they could regain the sea. They would swim up the harbour stream, following the fish ; before the embankment was made to the west of the entrance they were more commonly seen. Grey mullet were then very plentiful on what is now the new reclamation on the Holkham side ; flat-fish—plaice, dabs, and flounders—also afforded a plentiful dinner to exploring seals.

Nothing could be prettier or more interesting to watch than these friendly visits of the seals. Unfortunately the poor beasts were looked upon as game of rather a high order, and seldom escaped being shot or caught.

Their habit was to come in with the flood-tide ; and often a seal could be watched swimming below water just against the wall of the big quay. The 'gunners,' who had never seen the seals at the Zoo, were 'stammed' by the agility they showed in the water.

'I ha' seen one,' remarked my old friend, 'when the water was right clear alongside the quay, keep a-popping his head out, just for a moment, and then

down that would go again, and tarn oover on the back, and swim so, ten feet down, a-looking up at us while we kep' a-looking down at him, and a-rubbing his face and working his tail just like a merry-maid' (mermaid). 'When the tide ebbed that would goo on up the crick, and crawl out, and lay on the mud asleepen. One day I was comen home across the marshes with my gun, when I see right a great 'un lying by one o' them ponds where you shot the red-shank a-fighting. I see him afore he see me, and down I backs into a crick. The crick was so narrow that wouldn't hardly hold me and my 'side-bag' too, but I slipped down till I was within twenty yards of him, and then I peeped over the crab-grass and let fly at his head. He walloped away a bit towards the water, but anyhow that settled him. When he was dead he kep' sliding down the mud to the crick, where that was deep. He was too big to lift into the boat; so I got some boards and sloped them up, and rolled him up like a pig, till he fell into the boat. I flayed him, and had the skin tanned. I sold that to a curate. Once a sea-lion came and sat on the bar. He was asleepen, and one of the men got quietly up across the sand and threw a coat over his head, and then the others ran up, and the whole lot got hold of him, and so they "copped" him. They used to keep him in the

docks—that was some deep holes of water inside the quay—and haul him in with a rope to show him to folks. Soon he got right tame, and would come to the man that owned him when he called.'

Almost every year an eagle used to be seen in the marshes. These were in nearly every case young, white-tailed eagles going south. The projection of this north Norfolk coast is the naturally alighting-place of all birds travelling south along the shore, as well as of those which cross the sea from Norway and Sweden. White-tailed eagles were once so common in Norfolk that they were known as 'Fen eagles.' My old gunner stated that he had more than once seen one come up from the coast and fly over the lake at Holkham when it was covered with wild fowl.

'When the ducks see him that make 'em muster. Off they go to sea in a hurry; they can stand a hawk, but they don't want telling to go if an eagle come. One day I was coming home from shrimp catching, and when I come to the side of the big crick there sat an eagle within twenty yards of me. Another day, when I was crossing the marshes with my gun, I shot an eagle against the marsh head. I slipped up to the bridge, and when I fired he fell with one leg broken. I caught hold of him by the neck, and he caught hold of the mud and crab-grass with his sound foot. Didn't he pull out a

great lump o' mud and grass with his foot!—almost as big as a brick!'

Inside the line of the sea wall which embanks the last piece of salt marsh west of Wells is a reed bed of at least two hundred acres, with one or two pools of water. Towards evening this reed bed is certain to attract any of the larger hawks which may alight on their migration. They sit about on the bundles of cut reed, or flap along the dykes, looking for rats. Sometimes one comes out on to the open marsh east of the harbour. On one occasion one of these big hawks was attracted by the sight of dead ducks lying by the side of our old gunner, who was crouched in a 'duck-hole' on the mud, near the harbour mouth.

'The pake o' my cap,' he said, 'came out just as the edge caught my eye, and I kept thinking something had latched in it and was flickering in the wind. I put up my hand once or twice to brush it off, but the flicker went on, and when I looked up there was that great hawk, flickering his wings just over my head, looking at them dead ducks that was lying by me. I upped my gun and brought him down. I sold him to a schoolmaster, and *he ate him.*'

## THE WILD GREY GEESE OF HOLKHAM

IN a letter written in 1870 to the late Mr Stevenson, and published by him in the third volume of *The Birds of Norfolk*, Lord Leicester says, 'As long as I can recollect, wild geese have frequented the Holkham and Burnham marshes. Their time of appearing in this district is generally the last week of October, and their departure the end of March, varying a little according to the season. Till November they rarely alight in the marshes, or elsewhere in the neighbourhood, but are seen passing to and fro from the sea. Where they feed in October I know not; but from early in November till their time of departure for the North, the Holkham marshes have almost daily some hundreds of geese feeding in them.' These wild geese, from the time when they alight on their ancestral sand-bank until their departure for the North, are perhaps the most unusual and interesting of the rare birds to be found on the Norfolk coast. The semi-sanctuary

which they enjoy at Holkham makes it possible to observe them more closely than is often possible in the case of such wary and intelligent birds, and though they are not the largest species, being the pink-footed, and not the grey-leg species, they are true 'grey geese,' and as wild as those which Charles St John used to stalk on the Bay of Findhorn. The wings of the largest birds measure five feet from tip to tip, and the usual weight is from five to six pounds. From the nature of their food they are as desirable for the table as a 'stubble goose' at Michaelmas; but though, when the full numbers have arrived from the North, there must at times be as many as a thousand gathered at nightfall on the sands, their wariness is such that probably not five per cent. of their company fail to leave our coasts in spring. Though their nightly roosting-place on the sandbank is not more than two miles from a town of two thousand inhabitants, near which they fly twice daily on their way to and from their feeding-grounds, the geese, in their times of going and returning, have so nicely studied the hours of civilised man, and are so well acquainted with the limits of the protected area in which they usually feed during the daytime, that an ordinary visitor might spend months in the neighbourhood without seeing even a portion of the flock.

A single grey goose, flying along the sandhills, where we were enjoying a day's rabbit shooting, towards dusk, was the first ocular evidence to the writer that the birds were in the neighbourhood. It passed on with even, steady beats of the wings, and neck stretched out horizontally, the body never rising or falling an inch above or below the line at which it was travelling, until it disappeared in a fog bank above the sand. The marshes whence it came were those lying between Holkham and Wells, and it seemed probable that the geese were in their old haunt, as they were in 1870,—a curious instance, if justified by facts, of the conservative instinct of birds. A walk of two miles from Wells to Holkham showed that this was the case. From the former line of coast, now covered with timber and fields, the long fringe of 'meal marshes' can be seen stretching for miles on either side, an open prairie of grass, unbroken by hedge or tree, but divided lengthways by earthen banks, marking the limit of successive reclamations, and crossed only by a single road, leading from Holkham village to Holkham Bay. Thus every creature moving in the 'meal marshes' can be seen by a good pair of eyes, equipped with proper field glasses; but the distances are great, the colour and shades of the grass, varying from bright green, in the the old 'meals,' to a dull glaucous grey in the more recent reclamations, is decep-



tive, the wet dykes, banks, and occasional pools of water break the level more than is apparent, and the great number of birds feeding and moving in this immense sanctuary confuse and puzzle the vision when seeking to identify an unfamiliar species.

At our first visit, at noon, on a January morning, every part of the marsh showed large birds of different species at rest or in motion. A covey of partridges, as tame as chickens, lay just beyond the road fence. Pheasants were straying down the dyke sides, and hooded crows flapping and alighting further out in the flat. Near the centre hundreds of gulls were wheeling and screaming, and flocks of green plover drifting over the levels. At intervals, along the flat, half a score of herons were fishing in the dykes, and as they flew low, from point to point, raised for a moment a doubt whether these were not the geese. We had hardly identified and dismissed these various 'sources of error,' when the first geese were seen upon the flats. Seven great birds rose from an expanse of half-dead, greyish grass in the centre of the marsh, and, flying low over the ground, alighted at a distance of half-a-mile, near to a similar tract of pasture. There the glass showed distinctly line after line of geese, drawn up like companies of grey-coated soldiers, in the most open portion of the 'meals.' The drift of winter vapours across this fen, and the background of sand-

hills studded with rough grass and pines, accounted in part for their previous invisibility; but an accident showed that this 'grey goose' exactly matches the general tone of winter sky, sea, and vapours. Something disturbed the birds, and the whole flock, numbering above two hundred, came flying in double line overhead, at a height of not more than thirty yards. It was then seen that every part of the plumage, below as well as above, was a uniform smoky grey, no white showing in any part. The order of flight was in close double line, the wings of one goose just clearing those of its neighbour, though the central files were slightly advanced, giving to the line a slightly crescent form. In this reclamation the wild geese remain, grazing like sheep upon the grasses, from dawn till dusk, unless the humour takes them to fly inland and find a change of diet on the clover fields or winter-sown wheat. Towards evening they collect into a single body, previous to their final flight for the sandbank on which they roost. In certain winds they leave the marsh at once, and pass out to sea at Holkham Bay, whence they fly eastward to the great outer sand. The path to the bay, where the evening flight of the geese may best be viewed, runs between the sandhills and the sea. Along this ocean fringe we walked, carrying in our pockets some of

the specially-loaded cartridges filled by our old gunner, in the hope of securing a goose on its way back to the High Sand. There were signs that some of the flock had the previous night roosted on the sands of Holkham Bay itself; but the roar of the advancing sea showed that the tide was flowing fast, the wet sands grew wetter still, and it was clear that on this night they must seek a more distant resting-place. From the summit of the sand-hills around the bay the whole of the inner marsh was visible, while as far as Brancaster Haven the level ran due west, backed by the long lines of Holkham woods. Westward, beyond the flats, the setting sun, till then invisible, lifted the bottom of a cloud, and shot first red shafts of light across marsh and sea, and then, clearing the cloud, filled all the flats with golden haze, creeping low under the winter sky. For many minutes a continuous line of gulls, which had been feeding inland, kept floating seawards to the bay. The line extended as far as the eye could reach, the birds becoming visible as tiny specks over the gap in which lies Holkham Lake, and dropping, as they arrived, by the margin of the sea. The stream of gulls had hardly ceased when our old gunner, eager, acute and vigilant, exclaimed, 'I see the geese,' and pointed to the west, whence in the distance he had spied

them flying up the marsh. When opposite the bay they turned, and, flying backwards, pitched in a long line in the marsh, and there waited for the dusk before taking their final flight. From a hollow on the summit of a sandhill, sheltered by fringes of marrum grass and cushioned on soft sand, we watched the night set in over marshes, sands and sea. Landwards, as the light faded and the after-glow died out, the line of woods formed a wall of blackness next the sky. At their feet the marsh levels still held light, and even the mass of the grey geese was visible for a time. A sheet of greenish cloud still lit up the west, and when the marshes were at last wrapped in the blanket of twilight, the pools and dykes shone bright with its reflected glow. Behind and seawards were the fast-narrowing line of sands and the ever-growing sea, as the tide crept up in infinite lines of dark water and white breakers, with a continuous moaning roar—now louder, now softer—as the land wind freshened or fell. As colour died here also, and the ducks began to come in, like bullets, from the sea, a sound came across the flats like the sound of a ship passing in the night. It was the rising of the whole body of the geese, and the measured beats of their four hundred pairs of wings. When once in mid-air they came on ‘singing’—*jubilantes ordine*—with calls

as if a band of musicians with flutes and oboes were passing across the sky. As they reached the sandhills and rose high above their crests, the dusky lines were just discernible against the darkened sky.

This was a moment of intense excitement. Two local gunners, with long percussion eight-bore guns, had silently added themselves to our party, and as the files of geese passed overhead, the crack of the breech-loaders and the roar of their ancient guns echoed across the flats. The temptation to shoot too soon is almost irresistible on these occasions, and saved most of the geese aimed at, but one bird was hit, and came down in the shallows of the bay behind us.

‘Did you hear that fall?’ asked the old gunner. ‘That came down smack, like as if you had hit the water with a malt shovel!’ As we sought the bird in the gathering gloom there was a rush of wings above us, and a shout from the other gunners—‘Black necks! Black necks!’ and another discharge from their guns, but without result. This was a body of Canada geese, which live in a half wild state on Lord Leverton’s lake, and often fly out across the sands, where they are most improperly fired at by the gunners.

It was too dark to see, and though we were assured that if we waited another hour the goose would wash up on the point, the prospect of a long wait in the dark and cold was not inviting. We made

a compromise, by arranging with a fisherman to come round at light next morning and pick up the bird before the grey crows discovered the body. It was duly recovered, and proved to be a fine pink-footed goose, killed by a single No. 1 shot which had pierced from breast to back. The greater number, or more probably all, of the birds at Wells belong to this species, and though not so large as the grey-leg, our specimen was a handsome and gracefully proportioned bird. The pink legs and beak are exactly the shade which a *modiste* would select to set off the smoky greys of the plumage, and after hanging a fortnight, and roasting—care being taken not to baste the bird with its own gravy—it was as good as a stubble goose at Michaelmas.

## THE GREAT BARRIER SAND

THE Great Barrier Sand to which the geese were flying is the counterpart in our island of the Great Barrier Reef guarding the east Australian shore. From the Lynn Deeps eastward it swells and grows, until the myriad particles, compacted by tide and current, rise into the bank marked in the charts as the High Sand, which lies between wind and water, from Hunstanton to Yarmouth Roads. From Wells to Blakeney its summit caps all but the highest tides, soft in outline like golden snow, built up of matter as homogeneous as snowflakes, but less fantastic in contour than the snowdrifts, because water-soaked sand is heavier than an equal mass of clay. In the dark winter days the contrast of colours between the region of the sand and the parallel line of cultivated land marks and emphasises the wide difference in kind between those adjacent tracts of earth. The contrast extends from earth to sky, for the salt sands invite the wind and repel the clouds, while the sodden uplands, with

their lines of wood, suck in the water and hug the mists in every hollow. Thus each region keeps its own scheme of colour, and covers this with an appropriate sky. Dull clouds brood in smoke and heaviness above the fields, and steam and mist rise from the earth to meet them, suggesting the origin of the late-Roman myth that here lay the land of everlasting twilight, to whose verge the ghostly ships were ever busy transporting the souls of the departed. But the edge of the bright sand marks the limit of these clinging vapours. As the leaden clouds drift seawards, they are sucked outwards and upwards by ascending currents, the solid masses are drawn out, torn, and carded into flakes, as if by invisible fingers; the 'rack dislimns,' and whitens into drift and scud; lakes and splashes of azure broaden between the whitening clouds; tall shafts of light stalk across the plain and along the margin of the bank whence comes the everlasting thunder of the sea. Under such shifting skies the tawny sand changes with every gleam of light, or shadow of cloud, or change of level in the bank. Where the mass rises like a turtle's back, or has beset the black timbers of the wrecks, it takes the colour of red-gold; where the shafts of light traverse it, or the wet flats lie, it pales and fades. When the clouds darken and descend, then the sand flushes and reddens, and the darkness, which



kills all colour on the land, only brings out by contrast the warmth and glow of the limitless levels of the bank. When the tide is at its lowest, the sands seem more extensive even than the levels of the sea. Northwards the shallow sea itself seems to rise abruptly to the horizon, the lines of breakers appearing superimposed each upon the other, like a wall of faced grey flint with the white edges shining. But right and left the sand runs on, its surface unbroken by wave or ridge, but marked from distance to distance by the wrecks, the beacons, and the dim outline of the fowlers' nets, hanging like giant cobwebs, or the sails of phantom ships.

The wrecks are the ancient ruins in this shifting realm of sand. For ten, twenty, thirty years they have been fixed in the bank as firmly as if held in molten lead. Like ruined castles, each has its story, accurately remembered in the history of the coast. Scarcely one of the crews has ever lived to reach the shore, for no lifeboat can cross the sand into which the wrecks drift at high-water, and no man can swim through the miles of shallow surf. One wreck was full of frozen Lascars, whose black corpses, wrapped in shreds of cotton cloth, were washed up day by day on the snow which covered the High Sand. Another is the ruin of a sailing ship of the largest size—the *Pensacola*—loaded with

immense balks of timber; she came ashore with her masts smashed and her crew drowned, and grounded on the bank. There she lies yet, the deck facing the shore, her bottom filled with sand, her copper bolts green as malachite, and in her hold huge logs of tropical timber packed and wedged with pebbles, weed and shells. Mile after mile, from wreck to wreck of ship, ketch, brigantine, barque, schooner and smack the same story might be told. When the lifeboat has reached the wreck it has often only added to the victims of the sand. A vessel grounded in a gale on the outer sand, and the lifeboat was towed through devious channels and set loose out at sea to drift down to the wreck. The boat capsized, and all but two of the men were drowned. Of the survivors, one clung to the boat till it was washed ashore. The other, by sheer strength, swam and struggled through the breakers across the whole width of the High Sand, through the inner channel, and into the sandhills which bank the shore.

The line of highest elevation in this bank runs nearest to the sea. Here, at a distance of from one to two miles from the coast, the curve of the bank resembles that of the back of some enormous sole. At ordinary tides this is not covered by the sea, and to its safe surface, so smooth and uniform that it can conceal no enemy, the wild grey geese come

every year, and make it their nightly resting-place. If the tide covers the sand, the geese let it float them off their legs, and swim gently with the flood. At other times they sleep upon its highest line, leaving the sand at daybreak for the preserved fields and marshes inland. Some years ago the local fowlers, baffled in their attempts to shoot the geese when passing to and from the feeding-places, and aware of the danger of lying out upon the sand to shoot them by night, set up long lines of netting on the sand, to take the geese both when flying on dark nights and when swimming with the tide. At first the geese were caught in numbers. Now they are more wary; but the nets remain. Half-a-crown is the price of a netted goose, though not more than a dozen are taken in a season.

Even stints and knots are caught in these nets, though the meshes are more than twenty inches across. Away to the east, by Stiffkey and Blackeney, vast flats and bights of wetter sand lie between the high bank and the shore. As the writer last crossed this region of emptiness a furious, steady gale was blowing from land to sea, with such insistence that the thousands of shore birds upon the sands, though anxious to make their way against the storm to the shelter of Wells Harbour and the inner marshes, were constantly whirled backward, like clouds of drifting leaves, towards the east.



GOOSE NETS ON THE SANDS. *From a Photograph by R. B. LODGE.*



Nowhere on the world's surface, not even at sea, has the wind such absolute power as on these flats. Nothing even so large as a leaf breaks its force. It pushes like some giant hand, pressing every inch of body, face, limbs and clothing. There are no lulls, or currents, or breathing space. All the lower air is full of grains of sand moving swiftly on-like dry mist even across the wettest flats, grains taken from the 'hills' on the shore, to be piled upon the highest bank seawards. There, except by virtue of the cohesion given by the daily tides, it has no firm abiding place. The next northern gale carries its millions of grains, with other millions added, back to the shore, where the greater part is piled among the 'marrum grass,' and there remains in the ever-growing sandhills, which in turn protect the inner marshes and help them to grow into firm, dry land.

It is no exaggeration to say that the shore birds were massed in thousands on the sands; but what are thousands of birds when scattered on this almost limitless flat? We walked in line, one hundred and fifty yards apart, to sweep the birds towards the Stiffkey muds. On the left a flock of some five hundred knots rose and drifted before the gale; then turning, swung round and settled by one of the sand-embedded wrecks. A vast mass of stints and small shore fowl were seen on the inland side, many on wet

sands covered with the casts of sea-worms. These, too, went onwards, but when pursued turned and came back over our heads in broken flocks. Our shot was too small to reach them properly, but three or four were hit, and came down like stones from the sky on to the wet sands. On the left we pursued the knots. Knots were the favourite dish of King Canute, and doubtless the Danish colonies, up the creeks on this Norfolk shore, send many a dozen to the King's table. But that day we were baffled by the birds, which went out to sea, and, 'fetching a compass,' pitched behind us, on the outer edge of the High Sand. Before us grey plover, stints and curlew still rose and went forward, until the flocks congregated among the broken ridges of mud which mark the course cut through the High Sand of the Stiffkey River.

Then, lying on our backs on a ridge of muddy shingle, hoping to be mistaken for pieces of wreckage left by the tide, we waited for the body of the fowl to be driven past our scattered line of three guns.

In no long time the air was full of shining wings, glittering in the sun, as flocks of knots, grey plover and stints rose and faced the gale. A line of big brown birds passed within shot of one of the guns on the left, but, unused to shooting from a sitting posture, and with no experience of the pace at which

the birds travelled, he missed his chance. Just then the whole body of stints and grey plover passed, and left five of their number on the sand. Lastly a pair of small plover came sweeping past, low and out of range. These were 'whistled' by the gunner who was with us, and instantly swung round at the sound, passing within a few yards of the guns, and were added to the bag. Then we struggled back across the flats to the shelter of the sandhills on the shore.

There, wherever a patch of 'marrum grass' takes root, the sand blown from the great bank gathers round it. As the sand spreads, the grass grows through it, until the hard, dry blades form the nucleus of thousands of tons of 'hills.' Near Holkham Bay, there lay not forty years ago a wet 'lake,' inside the High Sand. There the 'gunners' used to hide for curlew, digging holes, and filling them with marrum grass to make them dry and comfortable. This grass took root, the sand gathered round, and where the 'lake' lay is now a tumultuous mass of rounded hillocks, rising twenty feet above high-water level,—built by the marrum grass from the surplus driftings of the mighty sand. On the great bank itself, there is little of the minor incident which interests even in the chance-built sandhills; only a fringe of fragile razor-shells and pink sea-net along the margin of



the sea, flocks of birds sitting, their white breasts shining in the sun, purple mussel shells wrenched from the beds, and lying in spots of brilliant colour, on the tawny sand. But nowhere on dry land is there such a pervading sense of space, of air, of distance, of pure bright colour, and of the dominant presence of the sea.

## WILD FOWL ON HOLKHAM LAKE

MR COKE of Holkham, afterwards created Earl of Leicester, was wont to say that when he first acquired his Norfolk estate he used to see two rabbits quarrelling for one blade of grass. He left Holkham the model property of Norfolk, yet while improving its culture he did not diminish its attractiveness for game. Its woods, which he planted, and its fields, which he brought into cultivation, produce more pheasants and partridges than those of any domain in England; and the lake which he dug in Holkham Park is the most famous gathering place of wild fowl even on the duck-frequented Norfolk coast. The lake lies in a gentle hollow, studded with ancient trees which probably stood in the original park of which the present domain is an extension. At the time of the writer's last visit the atmosphere of a dark winter's day played those strange tricks with the vision which occur even in our island, which Robert

Bates, fresh from the Equator, termed 'a sub-arctic region, under crepuscular skies.' One of the trees appeared to be surrounded by a thick circle of crossed oak fencing, such as is often placed round young trees, but is unnecessary as a protection for old timber. The old 'gunner' who was with us also agreed that it was a crossed timber paling. A nearer approach showed that it was a serried clump of fallow does, standing in a circle with their heads pointing towards the circumference, —a living fence of some fifty deer grouped round the old oak trunk. The head of the lake was then visible, clear of timber on every side, with the turf of the park running down to the water's edge. The surface was evidently covered with fowl, and the 'whew—whew—whew' of the widgeon could be heard from every part of the water and of the adjacent slopes. But on the opposite side, under some lofty trees at some distance from the water, were a number of dark objects, from eighty to a hundred, which we were unable to indentify. Opinions varied as to whether these creatures were sheep or deer lying asleep. They proved to be a flock of Canada geese, which have been acclimatised at Holkham as they have been at Lord Suffield's park of Gunton, in the same county. The birds were by no means tame, but rose and flew into the lake. They

regularly leave the water at certain hours, and fly into the marshes of 'Holkham Meals,' between the park and the sea, where they feed by day with the famous wild grey geese of Holkham, and nest like wild birds in the long line of sandhills which lies between Holkham Bay and Wells Harbour. A nearer view of the water showed the astonishing numbers of the indigenous wild fowl there collected. The area of the lake is some thirty-four acres, but it is not fed by a stream, as in the case with most large, ornamental waters, such as that at Blenheim, where the inflow of the River Gleam fills the lake-head with alluvial deposit, on which sedges and reeds make a natural refuge for fowl. The edge is as regular as that of the Long Water in Kensington Gardens, with grass cropped short by the grazing of the geese. Above lies the grey palace of Holkham Hall, and the outline of the water is as regular as that of the Italian windows in the façade of the house. Yet the fowl lie as thick as ducks upon a mill pond, though the gulls hovering over the surface, or floating like white boats among the ducks, show that this is no home of half-domestic birds, but the chosen resort of fowl from the adjacent levels of the shallow, northern sea. In rough and stormy weather, or long frosts, the true sea-ducks—scoters, golden-eyes, tufted ducks

and goosanders—visit the lake. But in mild seasons, such as that of the present month, only mallards, widgeon and teal, with black flocks of coots, cover the water. Occasionally a sea-eagle, ‘fen-eagles’ as they were called when they regularly visited the low countries of East Anglia, spends a few days in harrying the fowl; but though a marsh harrier was beating the ‘meals’ below, none of the larger hawks had disturbed the quiet of the fowl. The number of the mallard and widgeon floating on the water was beyond counting; but those sitting and sleeping on the eastern slope of turf were at least as numerous, the brilliant plumage of the mallard drakes, and the bright red and white of the cock widgeon making a very gay appearance on the dull, rain-soaked turf. When disturbed, the whole company rose to their feet and ran towards the water, the duck and widgeon rising with a rush and clatter of wings and plunging into the centre of the water; while the sooty coots, with the usual instinct of the rail family, ran till they reached the water’s edge, and then launched themselves, in a black fleet, among the gay, parti-coloured ducks. While the latter remained upon the water, the coots swam rapidly to the opposite bank, and climbing out, once more composed themselves for their damp siesta on the grass, indifferent to the angry

calling of the gulls and the quacks and whistles of mallard and widgeon.

The heronry marks the most picturesque point of the lake shore. The birds have selected for their nesting-place a grove of the highest and best-grown timber in the park, mainly beeches of great height and beautiful proportions. In the centre rises a flat-topped beech, towering above all its neighbours, and on the highest branches of this the 'master nest' is fixed, visible for a great distance, and marking the site of the colony far across the rolling waves of grass and scattered timber. North of the heronry the lake contracts, and the timber on the west bank closes up into a continuous line of ancient trees, lining the slope with a misty background of grey stems, and covering the ground with russet beds of fallen leaf. On the opposite bank are tall groves of ilex and pine, separated from the native timber by the deep and narrow waters of the lake. These are mainly haunted by the teal, which seem to prefer the quiet and seclusion afforded by the screen of trees. Below this narrow gut the water once more widens into a broad sheet above the dam; here the mallard collect in immense numbers, covering the water, and crowding in lines and companies on the shore beneath the evergreen trees. Though so wild and wary when once beyond the limits of the sanctuary, the birds are here almost as tame as

those upon the ornamental waters of the London parks. They stream off from the bank as the visitor approaches, alighting on the water at a distance of fifty yards, and taking no further notice of the intrusion, though well within range of a gun. Where the ilex grove ends, a bed of dried, rough grass fringes the water, through which a narrow beaten track, made by foot passengers and deer, runs to join the road across the dam. Something which was neither grass nor bushes blocked this track at the time of the writer's visit, apparently a dense growth of teasle tops. A nearer view showed this to be a line of ducks' heads, all turned in one direction. The birds were standing on the path in a long line facing the water, the approach of the visitors having given the signal of 'eyes left' to the whole regiment. Some five or six hundred mallard were soon afloat upon the water, while flight after flight of widgeon were seen passing over at a great height from the sea, to join those at the head of the lake.

The widgeon have not always frequented Holkham in such numbers. Formerly a decoy at Langham, the working of which was one of the amusements of Captain Marryat, the naval novelist, absorbed the greater number of the birds which did not spend the day out at sea. This decoy was closed in 1854, and since then the birds have repaired to Holkham. Mr Alexander Napier, writing to Mr Stevenson, the



**"A MISK O' DUCKS" CROSSING THE MOON. *By* LANCELOT SPEED.**





author of *The Birds of Norfolk*, states that the widgeon do not begin to arrive until early in November, and then only in very small flocks. 'The main body do not appear until well on in December, and then I should say that there are always more to be seen on the lake from the middle of January to the end of February than at any other time of the year; but their movements are largely governed by the weather. If the weather be fine and open, they do not show so early, but sit out at sea.' This was the case at the time of our visit, and great as was the number of the fowl it did not represent a fifth part of the flock collected in the severe weather of the same date in 1895. Both wild duck and widgeon leave the lake at night to feed in the vast stretch of creeks, samphire, salt marshes and half-reclaimed land which lends such strange beauty to the line of shore between Wells and Blakeney. In their choice of the hour of departure these two species, so alike in form and in their habits when in security, exhibit one of those unexplained differences in degree of caution in the avoidance of danger, which is one of the puzzles of the sportsman-naturalist. The wild duck leave at dusk, and nightly risk the chance of a shot from the 'gunners' waiting on the marshes at flight time. The widgeon wait till dark, and,

except on moonlight nights, seldom lose any of their number to the gun. As the fowlers are tramping home across the flats, they hear the widgeon 'like gales of wind' rushing high over the marshes; but the flocks are invisible, except when the moon is for a moment darkened by 'a misk o' ducks' flitting across its beams in the winter sky.

## SPORT IN THE SANDHILLS

It was proposed that we should have a day's rabbiting in the sandhills the east of Wells, with the old gunner to provide sport and anecdote. On reaching the quay we found that he intended to go to the 'hills,' not by land, but by water. A son and son-in-law was to row us up the creeks to the back of the warren. In addition, there was the ferreter with his bag of ferrets and nets. The old man had his gun, long boots and his 'side-bag,' as he calls a canvas and oilskin wallet into which he stuffs anything, from a wild duck to a match-box, and the others brought perforated boxes, spades and pails. These we found were for digging up and bringing home lug worms, which are sold at sixpence the hundred as bait to fishing boats bound for the North Sea. 'Slow trade, worming,' remarked our old friend; 'but sometimes you happen on curious things when you're arter 'em, or coming home from cockling. I recollect I was coming back from "worming" one

day, when I come on a fish a'most as broad as that was long. That lay on the side like right a great hog. "Why, Lord bless my heart alive," I said, "if this ain't a sun-fish!" And so that was. That didn't look no good to eat, and that was a bit smelly. However, some o' the old women, who was coman home from cocklin', they had a slice or two off it.' Wondering how the sun-fish 'fillets' were cooked, we shoved off, and rowed up the creek, among the flats of sea-lavender and crab-grass. The water and smooth banks of mud were shining in the morning sun, and we were urged to keep a look out for any birds that might rise as we turned the many corners and windings.

A couple of small plover came dashing down the stream and were dropped by a double shot from the bow of the boat. Further on a flock of green plover came drifting over, and gave a chance for a shot. We then amused ourselves by trying to work up to a company of hooded crows which were cracking mussels on an old wooden bridge across the creek. The crows sat like vultures on the rail, croaking and eating mussels, which they kept fetching from an abandoned mussel bed up the creek; but they knew as well as we did what was intended, and flew off before we were in shot. 'I'm allus glad when I get past that bridge, when the crick is

full and we're afloat,' remarked our guide. 'I was going up in a punt with a two-bladed paddle, and a gentleman with me. He was in a boat, where our guns and side-bags were. Well, nothing would suit him but *he* must go in the punt along with me, though there was hardly room for two. It was no use my talking, so all I said was, when we come under a bridge, that lay about a quarter of a mile up yonder, "Do you take care the tide don't turn the punt's bow round against the piles, and do you mind you don't catch yar paddle against 'em either, or over yow'l goo." "All right," he says, and he steps in and sets off as hard as he could paddle. Says I to myself, "Well, boy, I hope you'll come out as dry as you got in." However, when we came to the bridge, he hands over the paddle to me. Then I got hold of it wrong, hit the blade against the bridge, and we were over in a moment, and into the creek. He was in his fishermen's boots, with a side-bag with a duck in over his shoulder, and as he came up again he caught hold of me, and got on to my back. Each time I tried to swim, my legs kicked against his, and he kept bobbing my head under just when I did not expect it. Then I said, "If you don't leave go we shall both be drowned; I am nearly done already, and if I am I can't help you." Every time I turned round *with*

the tide I went under, and it was too strong for me to swim against it. Just then the punt, which was moored by its anchor which had caught in the mud, floated down a bit as the painter uncoiled, and I caught a hold and laid him across it. He left go of me and held on to the boat, and then I swam ashore. The others thought something was wrong, and came up in their boat. But we were too cold to "ride" along with them, and he was so done he wanted to go to sleep. However, we got across the marshes down to opposite the quay, and there we found no one awake but an old woman, who came out and rowed us across. I had about a pint of brandy, and next morning I was no worse, and what is more, I fished up the guns.'

At this point our craft 'appulsed' on a slope of the creek shore, and we got out to walk across the 'meal marshes,' to the sandhills. Only the ferreter came with us, and he had no gun. Our old friend remarked that he had had an accident and didn't use to carry a gun no more. I believe, as a matter of fact, it was someone else who 'had the accident,' but it was the ferreter who had the gun. We walked in line across a curious, half-formed land, studded with little juniper bushes, between which, in the wet parts, was samphire growing, and in the wetter bits, masses of sea-lavender.

There were also winding creeks, just like Scotch burns, only salt, and with thicker sea-lavender by their sides, just as the thickest heather grows by the burns on the moors. Here we rose a covey or two of partridges—*perdrix maritimus* we named them, for at high tides they had only a strip of sandhill to live on, and there was not a genuine land plant or seed for them to feed on on the whole marsh, and only a few elder bushes on the 'hills.' We flushed a number of stints and red-shanks also, but these were too wild to approach. But the rabbiting was excellent. Ferreting is usually a dull business. Unless the rabbits are in a very 'bolting' humour, it is slow, and they cannot, as a rule, be hurried. But in the light sand of the 'hills,' with no roots and bushes, and nothing more difficult than the marrum grass to stop digging, if digging be necessary, very good quick ferrets, and men handy with the spade, one gets on fast. Then the place was new and the whole scene amusing. Our campaign was on the inner side of the 'hills,' and I own to have had my doubts as to whether we should have much sport. We began by trying a piece of ground, forty yards square, covered with shortish grass, with no great number of holes. But the ferrets went in eagerly, and before our old gunner could give us even a word of good advice, of which he had plenty at hand, a couple of rabbits dashed out,



and almost before they were fired at dived into a hole again. We saw we must shoot quick, and so next time shot much too quickly, and 'smashed' our bunnies. Then we shot one or two scientifically, as they were good enough to make a rush for the big hills and gave a nice shot. When a rabbit was cornered and lay up, he was dug out in less than a minute, the men using elder rods to take the distance, and digging down with speed and certainty. Our next venture was in a line of minor hillocks, a kind of mountain range in miniature, none of them more than six or seven feet high. There were two or three rabbits in each hill, but it was impossible to guess which way they would bolt; the sand was absolutely noiseless to their feet, and, in addition, there was a high wind. Standing on the hillocks, and wishing we had eyes in the backs of our heads, we waited, shot, and laughed or applauded as we alternately missed or hit our bunnies. One needs to be in cover to take rabbiting seriously. They were growing abnormally sharp, for those in the nearest 'hills' found out what was going on, and one would occasionally slip out and race across the samphire and between the shingle banks, greatly pursued by shot and shouts. One or two neat rights and lefts gave us some satisfaction; but it was not an exhibition of finished

shooting. Having bagged fifteen rabbits, we decided on trying to drive the coveys of partridges we had sent on to the hills. These wild and lawless partridges, which have deserted the comfortable field of Wells and Stiffkey for this storm-beaten, sea-eaten strip of sand, are almost as wary as the wild geese. But, of course, our old gunner had a plan, and equally, of course, it was a good one. The birds like to fly along the line of hills when flushed, parallel with the sea; and we, the two guns who were to share this highly sporting 'drive,' arranged ourselves, one on the seaward, the other on the landward side of the hills, after making a solemn compact that neither would poke his head over the top to ask questions, and to run the risk of making his companion a homicide by getting his head blown off if the birds came past at that juncture. The first covey flew out into the marsh, but the next came past us, and were well missed as they topped the sandhills. They then pitched behind us, and we had a chase round the sand mounds, which the birds cleverly put between us and them before rising. Being used to shooting red-legs in the snow, I tracked them in the sand, but they were too quick, and all flew on and pitched one after another in some black marrum at some distance along the hills.

We followed, and walking carefully through the cover, flushed five and bagged a brace, very dark coloured, but large birds. By luncheon we had a brace of partridges and seventeen rabbits. While the meal was proceeding under shelter of a steep sandhill on the side of a breach formerly made by the sea through the centre of the hills, reminiscences of the sport and natural history of the place, and the life of the gunners and fishermen who make up a large percentage of its population, were the natural staple of conversation. The great sporting estate of Holkham is close by, and its owner is immensely popular among all classes in the neighbourhood. Some years ago a curious form of poaching was attempted, to which I do not remember to have heard a parallel. A 'gentleman,' accompanied by a lady and two friends, drove up to one of the local inns early in September and asked for rooms. They had a pair of horses, a waggonette, and some luggage following them by train, while there were three gun-cases in the carriage. The morning after they arrived the three men hired a boat, and, taking their guns, sailed round to the eastward. There they landed on the shore, and proceeded to beat some fields of turnips and standing barley, where they bagged a good many brace of birds and several

hares. The impudence of the proceeding prevented the farm labourers from asking any questions, and when the keeper came on the scene they were already in their boat, and sailing back to their quarters. Next day was Sunday, and the party amused themselves by shooting along the shore. Sunday shooting being properly considered to be bad taste by the native gunners, and the story of these people's piratical expedition of the day before being known, a watch was kept when they set off at daybreak next morning in a boat which they had hired for the purpose. It was clear that they meant to make a raid on the preserved sandhills at Holkham, and a neighbour at Wells rode over by a short cut and warned the keeper, whose beat included the sandhills, of what he suspected was designed. The surmise was correct. Hidden in the pines on the top of the hills, they watched the boat approach and ground upon the sand. One adventurer remained in the boat, with a flag on a stick. The other two went straight up into the sandhills and began to shoot at the hares and rabbits, which were very numerous. The keeper and his ally, after witnessing the death of a brace of hares, ran out, and got between the raiders and their boat, when the flag was waved by the third man, and the boat shoved off into water about four feet deep.

The two 'gentlemen poachers' ran out, and made, not for the boat, but for the sea, into which they walked till up to their knees, and then shouted to the keeper that they were below high-water mark, and that he had no power to meddle with them. The keeper's ally, who was quite as good a 'lawyer' as the raiders, begged him on no account to touch the men, but to demand their names. He also pointed out to the poachers that they had been seen to kill the hares, and that their then address was known, and that they had better give their names and depart. An insolent reply made the keeper lose his temper, and making into the water, he seized one man by the collar and with the other hand grasped his gun. That is the kind of thing which leads to half accidental homicide; the gun was instantly swung round and the muzzle driven against the keeper's body. It did not go off, and the men were allowed to get into their boat, after which they were in due course summoned and fined. 'The fine was cheerfully paid,' as the newspaper reports say, and so this curious instance of well-to-do law breaking closed. We were watching a gunner squatted in a 'duck hole' by the side of a wide creek, up which several curlew were flying as the flood tide covered the last mud banks of the harbour. Presently he fired, and bagged his bird, a

single one which was flapping past his hiding-place. We asked what was the best sport remembered to have been had from one of these uncomfortable hiding-places during the daytime, and the answer was 'nine ducks and widgeon,' in a gale, at flood tide, during a frost—no great encouragement so far as bagging fowl goes, though the smaller shore birds may be shot in considerable numbers. Near Lynn our old gunner killed thirty-six knots with a shoulder gun in one afternoon. After luncheon we began rabbiting again, and though they did not bolt so freely as in the morning, we had enough sport to keep us interested. We attempted to storm a big sandhill covered with scrubby elder bushes, the nearest approach to land vegetation among the hills. The warren was too large, and though we bolted a few bunnies, the rest only went deep down into the hill, where it was hopeless to reach them. One year a ferret was put down on this hill to select a hole, and instantly diving down the nearest one caught something which struggled hard not far down the burrow. The ferret was hauled out by the liner, and was found to have its teeth fast in a woodcock. Near an embanked creek at some distance we bolted several rabbits, and bagged three; but the thick junipers on the bank made shooting difficult. Our old guide had a

'grand rabbit shoot' here one August. A high tide had come up suddenly, when all the young half-grown and three-quarter grown rabbits were disporting themselves on the dry marsh, a quarter of a mile from their stronghold on the 'hills.' Unable to get back, they all crowded on to the embankment by the creek, and there were discovered by the old gunner, who was then acting as 'rabbiter' for the tenants of the hills, and shot forty with very little trouble—not a bad afternoon's bag for one gun. We were less successful, but our total bag amounted to twenty-four rabbits and a brace of partridges, with which we loaded up the boat, and after picking up those of the original crew who had gone 'worming,' and were now, like the curlews, driven off the sands by the tide, we dropped down the creek towards the town. We agreed to wait lower down the creek for the 'flight,' this, even where there is very little chance of sport, being deemed part of the whole duty of man at Wells. Our stand was by some pools, adjoining the creek, divided by low banks and near to several favourite feeding-places of mallard and widgeon. These birds had been coming in so late at night that there was very little chance of a shot. But it is always interesting to see the nightfall over the marsh, and to me a somewhat new experience. As dusk came

on, the notes of plover, redshanks and stints were heard all round, and we soon began to fire at quick, dim forms dashing past us. The stints were hardly worth shooting at, but gave capital practice, and we bagged several green plover and a redshank. Then, to our surprise, a whole rush of duck came high over head, followed by three, which to a practised flight-shot would have offered an excellent chance. Not having a 'duck eye,' I missed them, and our old gunner could only revenge himself by creeping down the side of a pool and getting a 'stram' at a lot of stints, of which he picked up half-a-dozen. Then we followed our leader across a path well known to him, leading to the firm sands opposite the quay. There we found some of the family waiting with the boat, and were duly ferried across the stream to the steps. Our old gunner's parlour looked bright and happy enough, by the light of a good paraffin lamp. The girls were getting tea ready, and by the fireplace hung the body of a big merganser, which had been so unfortunate to come up the creek in our absence. One of the girls, who gave us a cup of tea before we left for the hotel, had been saved from drowning by her father when she was a small child. He had put on his best clothes to go and play bowls, when he heard a shouting and screaming that someone was



'in the quay.' He jumped in and caught hold of a girl, who was floating face downwards. He pushed her to the quay side as she lay, and on turning her round found it was his own daughter.

## THE MEAL MARSHES

BETWEEN the sandhills and the shore, for miles to the east of Wells, and for many more miles towards Burnham and Brancaster, lies one of the most fascinating regions in England. 'Meals' or 'meal marshes' is the local name; but they are scarcely marshes, having progressed beyond that stage, and yet have hardly arrived at the status of dry land. At present they are like nothing else in nature. Wells-next-the-Sea is the central point in this fringe of meal marshes. The tidal creek—it can hardly be called an estuary, though a small stream flows into it—cuts its way through the flats to the sandhills and the sea. So much can be seen in the map or chart, for the district is in a transition stage, which makes it optional to treat it as land or water. To the left for many miles the 'meals' have been reclaimed to a point beyond Holkham, where they begin again. But eastward from Wells are nearly nine miles of level plain, between the shore and the sandhills, stretching

beyond Sir Nicholas Bacon's ancient hall at Stiffkey to below the tower of Blakeney.

This vast area is 'land in making'—so nearly made that parts of it are only covered by the tide twelve times in twelve months.

The scene, to one emerging on to the quay from the narrow streets of Wells Town, through the screen of warehouses which shut out all view of the shore from the town behind them, is as surprising in colour as in form. Even late in autumn, instead of sea, or mud-flats, there stretches a brown, golden and purple plain, bounded seawards by low sandhills, but stretching for ever westwards, apparently as limitless as the Kirghiz Steppe, cut only by the broad and shining creeks, along whose channel the tide carries up banks and beds of golden sand. But above the level of the creeks, and of all but the highest tides, stretch everywhere these purple flats, lovely, unique—the *moorlands of the sea*. I say moorlands, because the vegetation on this newly-created land is among the most beautiful and most complete instances of 'natural conformity'<sup>1</sup> and natural adaptation. It is not submarine, like the ribbon-grass in the sea-lakes and sea-meadows, where the lobsters burrow. Nor is it the vegetation of the shore, or of the reclamation, with fine grass, thrift and cup-

<sup>1</sup> By 'natural conformity' I mean the general correspondence of one set of natural features with another set, though there is perhaps no component of the one which is really akin to any in the other.

moss. Neither has it the flora and grasses of the sand-hills—sea-holly, marrum grass and rushes. It has developed for itself an equivalent for each plant which blossoms on the moorside. The place of the purple heather on the moors is taken on the flats by the sea-lavender. Its pale mauve, feathery blossoms cover thousands of acres, and, like the heather, it grows at all heights, from an inch in the wettest and lowest ground, to two feet on the higher and firmer soil. In winter the flowers turn purple-brown like the heatherbells; the leaves wither, and are less in evidence, and the effect is that of old heather, in sheet beyond sheet of purple-brown. Amongst the sea-lavender is another plant, called ‘crab-grass’ by the natives, which corresponds to the whortleberries of the moor. In autumn its deciduous leaves fall, and are washed up by the tide in lines and layers along the sides of the creeks and streams. In place of furze or juniper, a third plant, with dark green, fleshy leaves, grows on every knoll or bank above the level of the high spring tides. It can change its habit of growth to suit the soil, lying in rods like pink ‘*bacilli*’ on the wet sand creeping like a stonecrop on barren grounds, or rising into a bushy shrub, with deep roots and tough branches, where it escapes the visitation of the tide; its seeds have floated across the river and covered the tide-line of a new

embankment with its welcome growth. Thus Nature is covering the new-made land with vegetable soil, filling its alluvial surface with plant, leaf and fibre, and knitting the whole together in resistance to the ever-decreasing tides. Here is no weltering mud or slimy marsh, but new land, reclaimed on the largest scale by natural forces. The explorer of the flats finds there two waters—the waters of the creeks, which ebb and flow with the tide, and the surface waters, left by the highest ‘springs’ or by rain. The latter are a feature peculiar to these flats; neat pools set in the lavender jungle, of a uniform depth of from six inches to nine inches, with banks neatly edged with grass. The grass borders are always cropped short by the flocks of sheep driven on to feed when the low tides begin, and are also patted flat by the feet of ducks, gulls and plovers, which wash in the half-fresh pools. These lakelets are almost bare of marine life. In summer they are dried up, and after the autumn tides and rains the sun-cracks still score the bottom.

The characteristic bird of the wetter tracts of flats is the hooded crow. In the first easterly gales of autumn they flock across the North Sea in hundreds and thousands from Norway and the Baltic. ‘Denchmen’ (Danish men) is their local name; and everywhere on the shore, sandhills,

and inner flats, their heavy forms and hoarse voices are seen and heard. They haunt especially the bridges across the creeks; these are guarded by low rails, high enough to prevent the crowding sheep from pushing each other into the stream below, but never laid at a much greater height than a man's knee. On these the 'Denchmen' sit, cracking mussels on the posts, or croaking to companions on a neighbouring bridge. Partly from the arrangement of the grey hood, partly from their 'bunched-up' attitudes, they have then a curious likeness to vultures when sitting at rest, with no other bird near as a standard of size, on the wide expanse.

Towards evening the wild fowl swarm down from their sanctuary in the Holkham fields, lakes and marshes on to this great stretch of flats. Flock of peewits come floating in from the ploughlands, curlews and redshanks from the outer sands and mud, golden plovers, ringed plovers and ducks are all on the move for late dinner in the splashes and creeks and lavender beds of this nine-mile table of food.

Waiting for the 'flight' on the flats is the natural sequence to an autumn day at Wells. The way lies across the harbour, over acres of shining sand, and over miles of sandhills, held together by

the 'marrum grass'—a waste of rabbit warren, pebble banks, and rushes. On my first walk in the meal marshes, creeping among the shingles, and hardly visible on the parti-coloured ground, were a flock of snow-buntings, tame and confiding, the pets and song birds of explorers in the Polar seas, and newly arrived from their nesting-ground beyond the Arctic circle. The whole flock rose at once, and wheeled, twisting like dunlins or plovers, rather than first cousins of the buntings and yellowhammers of the English lanes. The wild geese were just alighting on the outer sand from the inland fields, and from the sea beyond a peregrine falcon on passage came flying inland, bound for Holkham woods. Partridges breed in this isolated tract of sandhills, and as with the attendant gunner I trod through the scrub and shingle, the coveys rose and flew, calling, to feed with the snipe and plover in the lavender beds on the flatter parts of the plain. As night fell, the flats were alive with fowl, the plovers, curlews and redshanks flicking through the gloom, ever and again crossing the line of dull, red sky to the west, while the lights of the town kindled and shone far away across the plain. I shot five green plover, and missed a number of birds I could not

identify in the dusk. In the open weather the wild ducks prefer to remain in the fresh-water marshes of Holkham; but though none came to their best-known haunts, the croak of the mallards could be heard as they paddled and fed in the creeks by the main body of the estuary waters. Then, as the stars came out, the journey home began, the native fowler leading the way with unerring tread across the darkness of the marsh. When the wet, firm sands were reached, in each footprint shone phosphorous sparks, leaving trails of pale fire, and even the waters of the pools standing in the sand flickered with light when the gunner, stooping down, ruffled the surface with his hand. The last bird seen upon the flats was a short-eared owl, hunting in the gloom, by the piles and jetties of the harbour quay.



## THE TERNS AND THE HIGH TIDE

My last visit to the old gunner found him on guard over the nests and eggs of the terns and other wild fowl in the sandhills. The Wells Society for the Preservation of Wild Birds, with the assistance of Mr J. A. Davidson, the lessee of the ground, have for some years guarded this, the last resting-place of the common tern in Norfolk, from egg robbers in the form of men, boys, rats, rooks and gulls. The result has been a great increase in strength of the tern population, which has risen from fifteen to more than a hundred pairs. As not only the terns, but all other shore birds near are protected, the latter have also increased, and both redshanks, ringed plover and peewits have nested in great numbers, not only on the sandhills, but on the 'meal marshes' which lie between these and the sound land. In the storms which preceded the Jubilee week, four successive tides flooded these

thousands of acres of meal marsh, drowning all the young birds and leaving the eggs in hundreds along the high-water mark on the sandhills. Though the rooks and gulls had been busy feeding on them, we counted nine eggs of the tern, seven of the ringed dotterel, a peewit's egg, with three dead nestling terns, within a distance of forty yards. The nests on the sandhills escaped the flood, but many young birds lie dead, killed by the cold rain. The western limit of their nesting-ground is a hollow in the sandhills, covered with scattered tufts of marrum grass. On either side, towards the sea, and inland by the meal marsh, are scattered ridges of shingle, the foundations on which the sandhills have grown up where the wind-borne atoms from the 'Great Barrier Sand' which the ebb tide uncovers have gathered and grown. High above the hills the large terns were hovering and calling, and scattered among the marrum stalks were found the nests and the newly-hatched young. The nests were not alike. Some were neatly made of dead grass. Others were hollows scraped in the sand. Others, by some curious freak of the birds, were lined entirely with tiny fragments of broken shells of cockles, razor-fish and mussels. The ringed plover, or 'stone runners' as they are locally called, arrange these fragments, apparently for ornament, outside their

nest. The terns seem to have imitated them without having sufficiently cultivated the æsthetic faculty. They use the shells not as ornaments, but as furniture. There is other evidence that the terns are less progressive birds than the plover tribe. When mature they are so tame that they are the easiest victims of the 'sportsmen' who shoot along the beach of seaside villages in August, and when newly hatched they show little of the instinct of self-preservation so marked among the plover tribe. The baby terns, just hatched on the sandhills, had crawled from their nests, even while half-hatched eggs remained. But they lay quite visible on the naked sand instead of making for some form of cover, like young peewits or ringed plover. The down with which they are covered is of the same tint as the ground colour of the peewit's egg.

This should aid in concealing them in a suitable environment. But their legs are too short to enable them to run, and the little birds lie humbly on the sand, with their necks stretched out and heads upon the ground. Then, seeing something moving close to them, even this 'defective' instinct deserts them. They open their beaks and cry for food. Many of the nests were made on the sand thrown out from rabbit's burrows, the most exposed site



NEST OF BROKEN SHELLS. *From a Photograph by R. B. LODGE.*



A BABY TERN. *From a Photograph.*



that could be chosen. Very few are formed on the shingle, where the three eggs which each contains would be almost invisible. The nests of the redshanks and of the ringed plovers are often made within a few yards of those of the large terns, and are far more difficult to find. Of four clutches of eggs, two of terns, the others of the redshanks and ringed plover, all of which lay in an area of a few yards, the former were seen at once. The redshank's were concealed in a marrum tuft, and the ringed plover's, lying in shingle of the same size and general colour as the eggs, were almost invisible. The ringed plovers are also adepts at decoying the visitor from their nests. There is a simplicity in their practice of the art which should endear them to every lover of birds. We were examining the point of a long tongue of shingle, where their nests were very numerous. All the parent birds, some seven or eight pairs, had run off the shingle on to a piece of rough ground, intersected by gullies cut by the high tides. There, one after another, they imitated the movements of a disabled bird, giving the performance in almost too great detail, for they appeared almost to creep upon their breasts, fluttering both wings, and spreading their tails, until, as we humoured them, they reached a considerable

distance from the nests, and then rose and flew off whistling. This shingle spit is the nesting-ground of the very few pairs of lesser terns left upon the marsh. The birds are scarcely larger than a swift, and utter a sharp, screaming call, unlike that of the greater tern. 'Chit perls' is the local name for these sea-swallows, and a 'chit perl's' nest is now rare even at Wells. The eggs are rather large, in proportion to the size of the bird, and were all laid in the shingle. One nest was only a few yards distant from that of a pipit, which had reared its brood at a distance of exactly six feet from high-water mark, in what is perhaps the most northern patch of vegetation on the Norfolk shore. In the high tide which flooded the 'meal marshes' several low mounds of shingle had remained as islands in the surrounding flood. This was particularly noticeable in a large bight inclosing many acres of sand heaps and shingle 'binks.' The high-water mark was traced round all these elevations, a mass of vegetable debris, bones of rabbits, of shore fowl, including some which appeared to belong respectively to the skeletons of the heron and the goose, and numbers of eggs and bodies of baby terns. Close by this wreckage, and to the drowned bodies and nests, were the eggs and living young which had escaped the surround-

ing flood. On four of these little mountains of refuge, none much larger than the floor of a drawing-room, were nests both of 'chit perls' and ringed plover.

On one of the smallest mounds, the area of whose unsubmerged summit as traced by the flood-mark had not been larger than a billiard table, a single infant tern was left as the sole survivor. It was scrambling about among the shingle and calling for food, though judging from its appearance it had only been hatched that morning. Two other eggs in the nest had been addled, probably by the cold, for the young in them were matured though dead. The scene from this inner bight between the meal marsh and the sandhills was such as can only be matched on other parts of this North Norfolk shore. Seawards, through a breach in the sandhills, through which the sea had carried the thousands of tons of shingle, on which the terns were, on to the inner marsh, lay the 'Great Barrier Sand,' on which a flock of curlew were sitting. Inside the sandhills, sitting in the sun, at a distance of a hundred yards, were five or six black and white ducks, obviously sheldrakes, several pairs of which are nesting in rabbit burrows on the sandhills. There also were a few land birds—linnets, water-wagtails, pipits, and larks—all of which nest upon the 'hills.' Above the line



of hillocks some two hundred terns were soaring, while ringed plovers were flying and whistling in every direction on the pebble banks. Towards the land and for nine miles eastward lay the 'meal marsh,' one vast sheet of grey crab-grass, pastured by flocks of newly-shorn sheep. Some years ago the rising tide flooded the meal marshes so rapidly that many hundreds of sheep were drowned, the flock following their leader into one of the deep creeks when the herbage of the marsh was submerged, and the line between shallow and deep water obliterated. In the wetter portions of the meal marsh were acres of dark green leaves, among which the noisy redshanks were calling incessantly. These are the summer leaves of the plant called 'sea-lavender.' Later the flower rises to a considerable height, and covers the ground with a mist of pale mauve, feathery blossom. The mandrake is also reported to grow upon the meal marshes, but we could not discover the leaves.

Watching these birds was a most congenial task to our old friend. He went up the creek every morning in his boat, carrying provisions for the day, and spent the hours of the longest days of summer, with his young boy as a companion, among the fowl, between the marshes and the sea.

Soon he knew the position of every nest in the hills, and of most in the marsh. He observed that the rats not only stole the tern's eggs, but attacked the young rabbits. This was observed in a nettle bed on a high mound close to his hut. He heard a rabbit screaming, and found a young one held by a very large rat, which had pressed its teeth in the rabbit's thigh. It would not let go, so he stamped on the rat, and killed it. I saw the body ; but the young rabbit, though lamed, managed to creep away to its hole. In the high tide only the eggs which were partly incubated floated ashore. The fresh ones remained in the nests. In one case a ringed plover returned to the nest which had been twice covered by the tide and began to sit. It deserves to be recorded that our old gunner had a most successful day at the Jubilee sports at Wells. He was a noted runner in his youth, having won for fifteen years a curious race—unique of its kind, which would be the coming event of the Wells 'regatta.' It was a race round the 'meal marshes,' with half-a-dozen wide and deep creeks to jump, and a course over crab-grass and samphire. The Jubilee races were held on the hard road, by the Buttlands, or ancient archery ground of the town. Not the least pleasing incident in a very characteristic celebration of local

loyalty was that when the old gunner won the race for all inhabitants over sixty years of age, coming in winner by ten yards. The prize was half a sovereign, and was promptly taken to the post-office and invested in a *gun license*.

**THE LOBSTER HUNTER OF BEMBRIDGE  
LEDGE**



## LOBSTER-CATCHING WITH HANDS AND FEET

SINCE the Mayor of Plymouth went out to catch lobsters on the rocks, and was himself caught, lobster-catching with the naked hand has been a discredited art. Even on the coast of the Isle of Wight, where the crab and lobster do duty as signs for half the inns of the fishing hamlets, and might well be adopted as the supporters of the coat-of-arms of the island, this heroic form of the sport barely survives. As now practised at the eastern corner of 'the Wight,' it is pursued by a single fisherman, who has revived what was a lost art. Its re-discovery was due to accident. Searching for king-crabs for bait among the rock pools and reefs of Bembridge Ledge, he one day pulled out, not a crab, but a fine lobster. Being an adept in most branches of long-shore sport and natural history, it was not long before he learnt the secrets of lobster life and habits in their summer sojourn near the shore. Thence-

forth he abandoned all the apparatus of the trade, and in place of boats and wicker cages, used only his eyes, and those wonderfully developed members, the fisherman's hand and foot. In his way he is as great a genius as the old Norfolk gunner described in previous chapters. His reputation for making short cuts to great ends in the domain of sport and fishing is great in the east corner of the island. He can bolt rabbits by the 'crab and candle' trick, just sticking a bit of candle end on the back of a crab, and starting him down the hole, when the rabbit takes it for the devil, and bolts without demur. He is expert in all the 'side lights' of the minor ebb-tide fisheries, and knows exactly where to look for the sand-eel shoals or the razor-fish buried beneath the sandbanks at low water. I have heard that he can draw a rabbit from its bury by pushing down a bramble and neatly twisting it into the fur. But it is *in the water*, barefooted and keen-eyed, that his powers of eye and hand, and knowledge of the ways of fish and 'crustaceans' is most striking.

An ebb tide spent among the reefs in such company shows more than can be learnt of the life of sea creatures in a dozen aquariums; and though an amateur will be long before he learns to draw an angry lobster from its hole with his naked hand,



THE CRAB AND CANDLE TRICK. *By* LANCELOT SPEED.





he may soon become an expert at discovering their haunts. At our first visit to the reef, the lobsters had been frightened, as our guide asserted, by a violent thunderstorm the previous evening, and many had retired into deeper water. But now the shore lay quiet in the hush before sunrise. There was neither mist nor vapour on sea or cliffs, which stood out sharp and clear in the salt air. The new moon had drawn the tide away to the furthest limits of the ebb, and uncovered hundreds of acres of reef between sea and shore. The inverted order of life below water leaves the ooze and mudbanks bare of life, and covers the barren stones with foliage. Each tract of rock has its appropriate growth. Every foot of the flat ledge is overlaid with pop-weed, so thickly in places that when spread flat at the ebb of the tide it looks like some sown crop, and makes an inelastic gelatinous cushion beneath the feet. These bronze flats stretch in level lines to where the storms have piled a Cyclops' wall against the outer edges of the reef. This is set with long fingers of a coarser weed, which hangs awash, and covers the entrance to the conger caves, whence the big eels often crawl to the minor pools within the reef. The accident of thrusting the fingers into a conger's mouth has to be considered among the possible contingencies

of the sport of lobster-catching with the hand, and a stout stick is carried as a weapon in the event of a conger hunt over the shallow lakes and sea-grass. But the rock caves and hard reef are not the favourite home of the lobsters. Tough and ancient lobsters, with barnacles and sea-web on their claws, may prefer a fixed home beyond low-water mark. But the younger lobsters love to roam. 'They go courting o' nights,' as our guide observed, and wander from pool to pool. If they meet a lady lobster on the rocks they walk, claw in claw, to the rich sea-meadows that lie within the reef, covered with heavy crops of green sea-grass. There the water lies in shallow sheets, even at the lowest ebb, and under the sea-turf the lobsters burrow like rabbits, and, like rabbits, leave outside their holes piles of stones and sand. Seen from the shore these sea-meadows appear as lakes, on which the long grass floats like green ribbon, combed in one direction by the set of the tide, and covering the surface with a level sheet of verdure. Into these lakes the lobster-catcher steps, barefooted and barearmed, with his basket and his conger club. As the eye grows used to the change from land to water, and learns to see the bottom as a gull or a brent goose or a fisherman sees it, the shallow lake is resolved into a series of submerged pools, each of which is a

natural aquarium. The tide slips over a deposit of sand and mud, which rests upon a bed of smooth rock. In this deposit the currents have excavated hollows down to the level of the underlying reef. On the hard bottom the sea-grass cannot grow, though its long ribbons are drawn by the currents and eddies across the surface, and often hide the pools from sight like a floating curtain. Beneath it, on the floor of the pools, are beds of cuplike moss, long brown fronds of crimp-weed, and feathery masses of sea-lichen. There the hermit-crabs creep in their whelk shells; spider-crabs, secure in their coat of real seaweed growing on their backs, sit still, and pretend to be stones; and lovely sea-anemones, green, like the grass, will suck your fingers with a hundred mouths, and give in kind, if not in quantity, the sensation caused by the grasp of the tentacles of an octopus.

‘You can have them pink,’ as a young lady who shared the sport remarked; but in the sea-meadows the zoophytes are of the colour of their surroundings.

Dr Caius, in his work on ‘English Dogges,’ mentions a kind which was used for catching lobsters. Judging from our experience of human instinct shown in the course of our morning among the rocks, we were inclined to think that a dog might be trained to aid in the sport, and that the story is not the myth it seems

Our guide quartered the ground like a water-spaniel, sweeping aside the floating weed, thrusting his feet beneath the hanging banks, and passing rapidly from pool to pool. 'Here is a lobster,' he remarked, pointing to the bank of a hollow, where an irregular mound of sand lay upon the bottom. Opposite this was the mouth of the burrow, where the lobster sits and feeds ; at a short distance was the bolt-hole which it makes, like the rabbit, for escape in time of danger. Into this the fisherman thrust his foot, and stripping off a foot or so of turf from above the main hole, put in his hand and drew out a fine blue lobster, which he grasped just behind the last of the smaller claws. It had recently shed its coat, and the new carapace, though perfectly formed, was of the texture and elasticity of thick note-paper. As we splashed on, searching the shallows, we learnt something of the habits of lobsters, and of the manipulation by which they are dragged from their holes. Sometimes the young, no larger than prawns, are found sitting in the same holes with their elders. More commonly a male and female lobster have made a joint burrow, and unite in defending it. At such times they will not 'bolt,' but fight at the entrance. Then it is that the timid and tentative finger of the amateur lobster catcher suffers. The expert thrusts in his whole hand, with the fingers flattened and held tightly together, keeping it pressed against the top of

the burrow until he feels the lobster's back, and grasps it beyond reach of the claws. In the course of our morning's hunt we found lobsters in burrows, lobsters under rocks, and lobsters under old bits of wreck. When the creature has made its bolt-hole in the shallow outside the pool in which it feeds, its efforts to escape are an amusing failure. Disturbed by the groping of the enemy below, it shoots out, tail foremost, from the upper hole, like a cork from a bottle, and falls helpless in the inch or so of water which lies among the grass. When bolted into one of the deeper pools, it is far less active than might be expected. It makes a few vigorous strokes backwards, swimming in jerks, like an enormous prawn made in dark blue lacquer, and then seems to lose its way, and can generally be picked up by the hand. If near a hole, it springs backwards through the water, and by some unknown means exactly hits the entrance. Perhaps the most amusing capture made during the morning was that of a small lobster, one of a pair which had swum out from beneath an ancient piece of wreck, and sprung tailwise into a shallow hole. The writer, not without misgivings, endeavoured to tickle the lobster, with that gentle and persuasive movement of the tips of the fingers, which beguiles the hiding trout. The lobster promptly gave each finger a nip, touching them off with the neatness and rapidity of a young lady playing scales. Finally,

our guide dragged out the lobster with fingers unpunished, though he bore the mark of a bite inflicted by one on the previous day which had cut like a knife. By the time the glorious August sun had tipped the cloud banks in the east, and turned the bronze seaweed into sheets of shining gold, our catch of lobsters numbered thirteen ; the thunder, or some other cause, had made them scarcer than usual on the reef, for our guide had, earlier in the season, caught fifty in the space of one ebb tide, by the use of hands and feet alone, in the pools on the ledge. In the 'Fur and Feather' series of monographs on game birds, directions for cooking the various species are thoughtfully added. In this connection it is worth remembering that these freshly caught lobsters are best eaten after being split and grilled in their shells. It is a mistake to suppose that lobsters should be thrown alive into boiling water. They can be killed by a prick from a penknife, and their capture is no more cruel than that of fish.

## PRAWNS AND PRAWN POOLS

IN the summer of 1896 the price of prawns rose higher than that of any shell-fish except the oyster, and if the present prejudices against the 'native' continues, the prawn will probably take its place as the most expensive luxury procured from the sea. At the end of May the fishermen received as much as twenty-three shillings a hundred for their prawns, the Derby day marking the highest price obtained during the summer. Excess of demand, not scarcity of fish, caused this welcome addition to the fishermen's earnings, for the catch of the season was among the best known for years. Like the lobsters, prawns do best in a hot summer, though it is difficult to imagine how 'dry weather' affects creatures living in the sea, and as the hot summer of 1893 was one of the best on record for the lobster fishery, while the cold spring of 1894 was one of the worst, so the number and size of the prawns in 1896 beat all recent records. In the previous summer the fish were scarce and small. The average



size was from sixty or seventy to the pound weight, and the catches were poor. In 1896, round the shores of the Isle of Wight, they averaged fifty to the pound, and thirty prawns to the pot commonly taken. One fortunate fisherman made a catch of nine hundred prawns in a single night. In such good times the prawn fisherman has what the sailors call 'a soft berth,' and visitors to the seaside with plenty of time on their hands and a little money to invest, might do worse than imitate his example and compete in the business. In one item only of his stock-in-trade has the professional fisherman distinctly the better of the amateur. He grows his withes in the sides of the cliffs, just where the springs break out and ooze into the beach, and he makes his prawn pots himself during odd times on winter evenings. They are exactly like a lobster pot, though the opening is smaller, not wider than the breadth of four fingers, and the osiers more closely set. If bought new they cost one shilling each. But the work of baiting and setting can be done by any amateur. At low tide the fisherman steps down to the rocks, and turning over the seaweed, catches hundreds of small 'king-crabs.' With these he baits the pots, and at half ebb tide rows out to the reef and drops his pots among the valleys and hollows which lie between the submarine 'kopjes' of the reef. Early next morning he rows out, hauls in his pots, boils his prawns for

about a minute in fresh water, and they are ready for market. The really fine large prawns, called 'spawn prawns' by the men, are caught early in the season. After July these disappear, and the smaller fish are caught. This forms the whole art and practice of the prawn fishery as usually known to the ordinary long-shore fisherman. Neither is his knowledge of the natural history of his quarry extensive, for though he knows that prawns shed their shells, and that they do this oftener when young than when adult—the 'weakness' from which, he contends, prevents small prawns from climbing into the pots! and therefore saves him the trouble of sorting them—he always maintains that the small prawns caught late in the season are 'big shrimps.' This is a curious mistake, for they are more unlike than the wasp and the bee. The prawn has a long, toothed sabre projecting from his head, staring eyes fixed on the end of stalks, six long antennæ, sometimes twice the length of its body, and a pair of fine double claws like a lobster's. When in the water, unboiled, the prawn is elegantly striped, like a tiger, with dark brown lines following the joints of his armour, and is altogether a very fine and fierce-looking fellow. The shrimp, on the other hand, has only two long antennæ, hooks instead of pinchers on his main claws, and is spotted and not striped. As the French sportsman said of the French partridge as distinguished

from the English partridge, 'his foliage' is quite different. So, in general, are his habits. Shrimps love sandy or muddy bottoms, but prawns, like lobsters, are mainly dwellers in the rocks. There, among the sea-lakes and ribbon-grass, and under the seaweeds which hang like mangrove roots from the big rocks, the half-transparent prawns live invisible and unvisited, captured only by night in the wicker traps of the fisherman, and inaccessible to the naturalist who desires to make their acquaintance when at home.

The lobster catcher of Bembridge Ledge has, as is his custom, 'another and a better way.' He takes a large shrimping net, and just adds prawns to the objects pursued during that particular ebb tide. With him, I have enjoyed more than one 'mixed day' after lobsters, prawns, and occasional flat fish and conger, hunted on foot, as we hunted the lobsters in the preceding chapter. Perhaps the most interesting was on an August morning, when we met at 'Lane End,'<sup>1</sup> opposite the south-eastern boundary of Bembridge Ledge. The lobster catcher has his home close by, and there two other 'regular' fishermen were awake and strolling down to catch king-crabs among the rocks. We were going there, too, but to take our game directly—at

<sup>1</sup> Mr Holbrook, Lane End, Bembridge.

first hand, by summons and storm, so to say, not by siege and artifice. The lobster catcher, his trousers turned up above his knees, a basket on his arm to carry the game, and his prawn net on a pole, strode down over the shingle and sand, and thence on to the reef and into the pools, sea-lakes and ribbon-grass. He thrust his prawn net hither and thither along the sides of the rocks, or drove it in front of him through the pools. Now and again a fat prawn jumped clean out of the water like a skip-jack, seeking to avoid the net. These he sometimes fielded as neatly as a cricketer would a ball, catching them in his unoccupied hand. Then we laughed, and drank success to our fishing, for the water was chilly. In a few minutes we had a dozen fat prawn. They were semi-transparent, and mainly the colour of wet sand. But all the 'joints of their harness' were marked with double and treble lines of claret red—a very elegant and 'high art' arrangement. One prawn was eating his breakfast—a small worm, which he was stuffing into his mouth with one claw. Then we got on to lobster ground, and I took the prawn net while he walked, foot-feeling and eye-gazing, to touch or see a lobster's haunt. We soon discovered one—a large hole with a heap of black sand outside. As there was an open pool with no weed

on the surface opposite, the lobster was ejected from the 'bolt-hole' above, and made to swim backwards across the pool. He did so rapidly, and on coming within a yard of the other side gave a spring backwards and vanished! He had another hole in the opposite bank, into which he sprang. In the larger 'lakes,' in the centre of the reef, we discovered fine 'cover' for prawns, and beat it carefully, bagging in all sixty-seven before we turned our attention to lobsters and natural history. The rapidity, certainty and skill with which the lobster hunter marks, attacks and catches his fish are most astonishing. He would 'spy' a likely hole, thrust his foot in at one end, his hand in at the other, tear off a piece of submarine turf and pull out his lobster, all in some forty seconds. Thus we hunted on and caught seven more, when we began 'treading' flat fish and catching the 'common objects' of the reef. The former were only little 'butts' and dabs; but the live creatures in the seaweed were more interesting. They gave one of the most marked instances of the sharp changes by which the colour of living creatures is adapted to its environment to be seen in our country. The colours of the vegetation on the reef are three in number, bright green ribbon-grass, golden and yellow seaweed, in large patches, and also dark bronze seaweed. In all these are found sea-snails, small pipe

fish, and another short, stout fish about three inches long. In the yellow seaweed these three species are yellow. In the sea-grass, which floats in the pools joining the rocks covered with yellow seaweed, they are all green above and the fish greenish-gold beneath; and in the bronze seaweed they are bronze-brown.

But there are other pools of a very different kind in which prawns live and thrive, while their existence is unsuspected by the fishermen who are busy catching their relations out at sea. These are the backwaters or soakage pools of estuaries, beyond the limits of ordinary tides, or enclosed by dams, beneath which the waters soak and form inner lakes of brackish water. These are the ordinary haunts of 'estuary fishes'—flounders, crabs, plaice, sea-worms, sand-eels and, where the bottom is muddy, of oysters. In one of these pools the writer found and made the acquaintance of a colony of prawns. The history of the pool and the origin of its inhabitants are somewhat obscure. It lies within the banks of a reclamation, and forms a shallow sheet of water some two hundred yards in length. A broad embankment separates it from the sea, and on its stony margin and the adjacent flats land plants, thistles and docks have mixed with the samphire and sea michaelmas daisy (*aster*

*maritima*), now in full flower, and great flocks of linnets feed upon the seeds. A brood of five cygnets were hatched upon an island in the pool, and the waters, mainly supplied by soakage under the embankment, had shrunk during the dry summer. Yet this pool, searched for food from daylight to dark by the swans and haunted by sea birds, swarms with prawns. Their great gathering-place is on either side of a conduit, passing beneath a causeway thrown across the pools. A current sets through this, east or west, according to the direction of the wind, carrying with it a vast store of minute animal and vegetable atoms. Green, thread-like water weeds grow on either side, and the water is dark and thick near the bottom. The prawn is semi-transparent, and far less visible, even in clear water, than a fish. It would be impossible for a shoal even of small fishes to remain unnoticed in such a place, yet the presence of the prawns is never suspected. As the visitor approaches, the surface of the water is agitated for a moment as if someone had cast handfuls of dust upon it. If the inquirer lies down and keeps his face still at a distance of a foot from the water, after gazing into the deeps for a few minutes he becomes aware of something like a light greyish dappled cloud gathering towards

the surface from the bottom and sides of the pool. As the units composing the cloud draw nearer he becomes further aware of a forest of waving, hair-like antennæ and many hundreds of pairs of round, protruding eyes, set on stalks, and staring into his own with a fixed lack-lustre gaze. These are the eyes of the prawn, who are rising gradually to the surface and staring him out of countenance. If he keeps still, they conclude that the face above them is a bit of wood, or perhaps the figure-head of a ship, and rise to within a few inches of the surface, though every prawn keeps its eyes fixed upon him. Moreover, they hang tail downwards in the water, and, keeping 'bows on to the enemy,' present only their faces, sabre-like horns, antennæ, and staring eyes for inspection. No one seeing them from this point of view would readily identify them as prawns, and it is only when confidence is quite restored that they abandon the 'bows on' position and cruise about in the pool. Though so crowded together that an ordinary landing-net would capture a score at a dip, they do not appear to be feeding or to have any particular object in view except to wait in the sluggish current of the conduit. 'Loitering with intent' is the police court phrase which best describes their attitude; but every solid particle which comes through the channel seems to undergo



some sort of examination by their antennæ, and occasionally a piece of weed is taken in the pincer claws and tasted. When thus engaged, they swim or creep slowly forward by means of their forelegs. If a sudden movement is made their power of instantaneous disappearance is explained. Each and every member of the company springs backwards as if shot out of a catapult for a foot or more towards the bottom, and the slight disturbance made by hundreds of dimples rising to the surface distracts the eye from the submarine retreat of the prawns. When reappearing, their rise is as silent and gradual as their flight is sudden and violent.

## SANDBANK FISHERIES

THAT the long sole-backed sands, uncovered at low water and during the greater part of the ebb, should be the site of a fishery seems at first somewhat surprising. The white, waterless sand, shining in the sun, the playground of children and basking-place of seagulls, is barren of all vegetable growth, and would seem equally unfavourable for fishes and crustacea. Yet this 'arid belt' of the fringe of land and sea is the scene of many of the minor fisheries of the coast. Fish swarm over its surface when the flood sets across the sand, and when left bare and apparently void of life by the ebb tide, it conceals beneath its surface a vast population of living creatures hidden and waiting for the return of the tide. The visitor walking over the firm, damp sands is often ignorant that a few inches beneath his feet are not only countless numbers of edible crustacea, but also shoals of fish, and that during the ebb the sandbank is not a mere in-

organic heap of gritty particles, but a 'sand-pie' stuffed with live eels and shell-fish, waiting in comfort and concealment for the return of the tide.

The animals of the sandbank fishery may be divided roughly into those which leave the bank and follow the ebb, and those which, in the language of the fishermen, 'sand,' and wait beneath the surface till the sea once more covers them. Most of the former, the dabs, plaice and other flat fish, with the shrimps and sand-crabs, conform exactly to the colour of the sand. This is necessary, because they lie upon its surface at all times, and this being awash with the ripples and waves of the shallow water, powders the sand over their backs and makes them invisible. When the tide covers the bank these are speared or trawled for in the ordinary way. At the ebb they retreat seawards, or occasionally enter the tidal sluices as the water begins to recede, and lie in the land streams flowing into the harbours. These shallow, gentle streams, shut in automatically at high tide, and only running at the ebb, are covered at the bottom by a thin, smooth layer of the finest mud. Beneath this lies the sand, and between the two the flat fish are concealed. When one dies 'from natural causes' his bones gradually whiten *in situ*, and the skeleton lies perfect and unbroken

like a 'preparation' in a surgical museum, with the fine grey mud between them. In time, when the mud becomes shale and the sand sandstone, the flounder will appear as one of those strangely perfect 'fossil fish' which are found in stratified rocks—a relic of the sandbank fishes of the later nineteenth century.

The fish which remain true to the sandbank, whether wet or dry, are the sand-sprats, the cockles, the razor-fish, and the big worms, which, though not a 'fish,' are the basis of many fisheries in the form of bait, and bring work and money to the bait catchers on many parts of the coast. The sand-sprats, delicate as whitebait, and even more beautiful in appearance, are the most interesting in their habits and history of the inhabitants of the bank. 'Sand-eel' and 'sand-sprat,' the common names of the fish, give little clue to its appearance, for it resembles neither an eel nor a sprat. 'Sand-lance,' one of its local titles, is more appropriate, for when taken from the water or sand it lies like a straight and pointed spit of steel or silver. The fish has a pointed head, the lower jaw projecting in a sharp point below the upper, and a flattened, sword-like body, smooth and burnished. It haunts the sandy coasts in countless shoals, and is the principal food of the predatory fishes when coasting along the



seals; the gulls are resting like chickens on the sand, lazy and unwilling to move, and the only movement on the shore is that of the sleepy fishermen wading down, basket in hand, to catch king-crabs for bait among the rocks. The only equipment needed is a five-pronged trident-like fork, fixed in a stout handle of ash. This, though resembling a trident, is an 'implement,' and not a weapon, used for digging, and not for impaling the fish, and with the 'worming spade' is manufactured by the long-shore blacksmith, whose business lies as much with the fishermen and boat repairers as with the farmers and waggon owners up country. The whereabouts of the buried shoals can only be determined by 'trial and error,' but the work is light and rapid, and the broad trident lifts the caked sand in great flakes. 'It is a deal easier than digging potatoes,' as the lobster hunter, who first suggested to us this form of August sport very earnestly remarked, and vastly more exciting. As the sand is turned over the flakes break in pieces, and among the fragments a shine of silver is seen. Then the sand-lances wriggle from the heaps, and the fun begins. Big fish and little fish are turned up at each dig of the fork, and the baskets may be filled in an hour until the time comes to retreat before the flood making inwards across the sand. When

caught the fish are cooked like whitebait ; at Bembridge the dish has a regular place in the menu, being labelled 'blackbait.' Razor-fish, like the sand-lances, are also buried at the ebb. Their broken shells, like a razor handle, are common upon the beach, but the living mollusc is rarely seen. As food they much surpass the cockle or mussel, but even the fishermen who make it their business to collect the latter neglect the razor-fish. The shell is too fragile to bear transport, and is often broken in the process of digging. A simple device for catching razor-fish for the table is to visit the sandbank at the ebb tide, with a packet of coarse salt, and to follow the ebb at a distance of a few yards from the water. The hiding-place of the fish is then marked by little jets of sand and water, which it ejects from its burrow. If a small handful of salt be laid upon the hole and left to dissolve, the fish feels uncomfortable, and in the course of a few minutes forces its way to the surface, when the mouth of the projecting shell can be seized and the long, double tube drawn out uninjured. But the great fishery of the sandbank is the cockle harvest. Cockles have been the luxury of the poor from the Stone Age until to-day, and fortunately there seems no prospect of their decrease. It was 'the son of a husbandman' whom Æsop described

as cooking cockles; poor pilgrims ate them on the strand of Joppa, and brought home the shells in their hats; and to-day they are the 'poor man's oyster' in the London streets. On one occasion in late years they were eaten by royalty in England—but the royal personage was the Maori king, for whom they were provided as a *bonne bouche* at a garden party, because he had remarked that in New Zealand gentlemen ate cockles and not oysters, which were only fit for common people. But as the common people here like cockles, and plenty of them, the sandbank is valuable as a cockle ground, and in Morecambe Bay and in the Wash the cockle beds are immensely large, and the industry thrives. Carts and waggons are driven across the sands of the Wash to fetch in the cockles, and often the race between horses and tide is close and dangerous. Strange as it seems, the cockles, unlike the oysters, wander at times and desert their old 'beds' for new ones. Near Morecambe Bay a clergyman recently complained that he had lost half of his parishioners. The cockles had deserted the foreshore of his parish and moved across the bay; and the parish had moved after them.



## SHORE BIRDS' NESTS IN BRADING HARBOUR

THE reclamation of Brading Haven, in the Isle of Wight, has changed what was once an island lake into a nesting-ground for the birds which formerly swam upon its surface. The level, with its shingle banks, rough pastures, marshes, and embanked streams, is protected from disturbance in the breeding season, and green plovers, redshanks, wild ducks, sand-pipers, swans, wheatears and teal, as well as many land birds, including the partridge and the nightjar, all rear their young in peace and quiet, where twenty years ago the Bembridge fishermen used to draw their nets. On visiting the warren there, to see the lobster hunter, bolt rabbits by the crab and candle trick, we found that all these birds, except the two last, were either making their nests or sitting on their eggs. The swans, which in Brading Harbour lead a life as free and independent as if they were wild birds, were all sitting. One pair had made a nest on a bare

islet in the centre of a salt pool. On this they had built a nest like a turret, of dead grass, and the hen, surrounded by a miniature lake, was secure from disturbance, though her mate was cruising jealously round her, to guard the nest. Another pair had built on the side of a wide stream which bounds the flower garden now cultivated in the harbour. The hen was sitting on six eggs, and the male bird was on guard some sixty yards away. As we approached the nest, the cock bird instantly rushed to the rescue. Rising from the water with loud beats of the wings, it flew at a height of about six feet straight towards the heads of the intruders. A screen of dwarf willows baffled the swan's attack; but it dropped on the water, rushed out in front of the nest, and tried to pass the barrier on foot. This we were able to prevent by guarding the breaches in the willow barrier, and the bird, after being repeatedly driven back, stood in front of its mate, its head raised high, its wings spread, and its tail touching the ground. The rush of the swan when flying was very fine; and the outstretched neck and beating pinions so formidable that no one would care to encounter it in the open.

On the rougher parts of the level were several nests of the green plover, made, as is their custom, on the bare and open field. Those of the redshank

were far more difficult to find. The birds are very fussy and anxious as the nest is approached, flying round and calling incessantly; but the only nest found was in the centre of a tuft of rough grass, so carefully covered, that unless the track of the birds had been observed in the herbage round, the eggs would not have been detected. Near the redshanks' nest was a new rabbit warren. The rabbits had discovered a sand-bed, though it was quite invisible and covered with grass, and migrated there, a distance of half-a-mile from their old quarters on the golf links. Wheatears were building in the rabbit holes, and on the edge of a marsh near was a wild duck's nest, just ready for eggs. The wild ducks have a fancy for leaving the harbour in the nesting season, and rearing their broods either in the cliffs by the shore, or in the woods which lie on the hills that rise from what was once the edge of the Brading Haven. This appears to be a mechanical survival of an old habit, for there is now ample cover for nests on the site of the old harbour. We found one of these nests by accidentally disturbing the sitting bird in passing through the wood. She flew up from the side of a small, damp hollow, and the nest, containing eight olive-brown eggs, lay under a bramble bush, surrounded by primrose blossoms, and half covered by dead grass. It was carefully

made of grass and leaves, with a quantity of down for lining. Every evening the two ducks used to fly in from the harbour, and after circling round the wood twice or thrice, dive down among the trees and visit the nest. Unfortunately, the thieving carrion crows discovered it, and stole every egg. The main river is confined between high green banks, set on either side with willows and osiers. Each bank forms a straight green alley running for a mile, with the river on one side and 'splashes' of brackish water on the other. On the embankment the nearness of the sea is at once forgotten. The landscape becomes riverine; with willows in green leaf and covered with yellow blossoms. The dead reeds stand in masses ten feet high, showing the joints in their stems like miniature bamboos. Young green reeds are growing up between them, sedge-warblers singing in the willows, roach sucking in the stream, moor-hens croaking, and single mallards circling overhead or dropping on to the river like birds on a Japanese screen. The river has carried down the seeds of fresh water and land plants, and sowed them all along its banks. Wild honeysuckle is growing freely among the willows on this old sea-bed; water forget-me-not and meadow-sweet have also been brought there by the stream. The metamorphosis is complete. One might be miles from the salt water.

The wind had sunk, and the beams of the setting sun were streaming level across the flat, and all the birds were enjoying the light and quiet. Standing by a bridge, we watched the green plovers running up and down on the turf, and one or two sand-pipers and waders playing by a shallow pool. A bird, which we at first took for a curlew, was wading about near some sedges. The glasses showed it to be a redshank feeding. Every now and then it thrusts its neck out parallel with the water, and caught some insects; presently it began to bathe, and then stepped out upon the bank to dry its feathers and bask in the evening sun. The same object attracted a flock of some hundred sea-gulls from the Culver Cliffs, which face the south-east, and were at this time in shadow. They selected a meadow sloping opposite the west, and settled down to bask in such numbers that the field looked as if it had been 'dressed' with chalk.

Our further progress down the embankment was barred by a pair of swans, one of which was sitting on a nest in the middle of the path. The male swan flew across from the river to help her hold the passage, and not wishing to accept the challenge, we made a *détour* and reached the river lower down. This pair of swans nested last year on the opposite side of the stream, and were so earnest in the care of the eggs that both birds used to sit on them together. Each was most anxious

that the other should cover the eggs properly, and first one bird and then the other would curve its neck over the back of its mate, and putting its beak down, feel between the feathers and the nest, to see if any part of an egg were uncovered, and if so, 'tuck it in' under the other's body.

The nest which had been more particularly the object of our search—that of the ringed plovers—had not yet been found, and the place of its ultimate discovery illustrated the persistency with which birds return to a favourite breeding-place under greatly altered conditions. The surest place in the reclaimed harbour for finding a few nests used to be on the site of what was formerly a bed of cockles, small pebbles and old periwinkle shells, lying on a stratum of thin, sandy soil. This was exactly suited for the protection of the eggs, which matched in colour the pebbles and shells. But during the last few years fine grass, clover, and a beautiful moss, with little bright green flowers, or buds, like miniature maidenhair, have covered the cockle bed, which is fast turning into 'rabbit turf' and meadow, studded with furze bushes. To this we made our way, and searched carefully on the mounds, where the shells and pebbles lay half buried in moss and grasses. One or two neat hollows, of the size and shape of an old tea-cup, showed that the birds had revisited the spot, and had been thinking of nest-making ; before long we dis-

covered a real nest, ready for the eggs to be laid. Where the ringed plovers usually build, as on this ground in its old condition, the scratching out of a hollow is considered enough for the purpose of a nest, the eggs being so like the shells and stones that they need no protection. But now that the site was surrounded with vegetation, the ringed plovers had departed from their custom, and inverted the process by which birds generally conceal their nest. The adaptation of the nest to its environment, which is the common means employed—the use of moss, leaves, lichens or grasses like those in the neighbourhood—was not possible for a bird which never *builds* a nest at all. So the plovers had ‘adapted the environment’ to the nest, or rather to the eggs.\* They had gathered shells and pebbles, and set them all round the hollow, to a distance of seven or eight inches. Broken and whole shells of cockles, pieces of decayed oyster shell, butterfish shells, and mauve and brown periwinkles, with small pebbles, were laid carefully round it; and though this was most completely carried out in the first nest found, several others, which did not contain eggs, were in process of being surrounded by a similar setting.

\* In a previous chapter I have suggested that this is due to an asthetic feeling for prettiness on the part of the ringed plover. In the case of the Brading Harbour nests it was really useful, for the original stony surface was nearly covered with grass and moss, and the shells helped to break up the uniform green.

## ‘ISLE OF WIGHT PARSONS’

IN the grey December days, when our pools and meres are misty, dismal and solitary, news is often brought that a ‘diver’ has appeared upon the lake. The ‘diver’ is, in nine cases out of ten, a cormorant, for a few of the birds often leave the cliffs and coast at this season, and take up their quarters on some inland water, where, if not disturbed, they will remain for weeks, working destruction among the tench and eels, but affording a most interesting exhibition of their skill in diving, which may then be watched at close quarters. On Charles Waterton’s lake at Walton Hall, in the West Riding of Yorkshire, they were constant visitors in winter, and were so tame that they would sit and dry their feathers on the terrace wall, within ten feet of the drawing-room windows. Even on the Serpentine a single wild cormorant sometimes appears at the end of the year, though, to judge by the non-success of human anglers, the stock of fish



can hardly furnish fully a cormorant's Christmas dinner.

The bird has an evil aspect, and an undeservedly bad name. In *Paradise Lost*, Satan, breaking into Eden, changes his shape, and sits like a cormorant on the tree of life, 'devising death to them who lived,' and the post-classical legend of its metamorphosis, which Waterton recollected or invented, is perhaps the only cormorant story which does not aim at discrediting it. 'The cormorant,' he writes, 'was once a wool merchant. He entered into partnership with the bramble and the bat, and freighted a ship with wool. She struck on some rocks, and went to the bottom. This loss caused the firm to become bankrupt. Since that disaster, the bat skulks in his hiding-hole till twilight, that he may avoid his creditors. The bramble seizes hold of every passing sheep, to make up for his loss by retaining part of its wool; while the cormorant is for ever diving into the waters of the deep, in hope of discovering where his foundered vessel lies.' But the Miltonian estimate of the cormorant is still the most popular, and the strong, silent, and methodical birds—which, except in the neighbourhood of preserved fisheries, should be protected equally with the rooks on shore—are shot when possible, and allowed no law in the close

time which other rock fowl enjoy. The legal protection now extended to the latter was mainly due to a desire that the amenities of our coast scenery should not suffer by their destruction ; and a plea for the preservation of the cormorant may be urged on even stronger grounds. They are far the largest and most striking in appearance of our common sea fowl. A male cormorant is a yard long, and very strong and heavy ; and though more quaint than beautiful, whether flying, diving, or sitting on the rocks or buoys, it is a far more interesting creature than the seagull, a wonderful instance of adaptation of form to special needs, and of permanence of type enduring from remote ages ; for the fossil cormorant hardly differs from those which are now fishing from the cliffs in which their petrified ancestors are embedded. Our common 'great black cormorant' is not only the most representative type of his family, but a link with the inhabitants of the shallow seas of both the old and new worlds. He is found throughout Europe, in North Africa, Egypt, and the greater part of Asia, in Eastern North America, and, a little changed by distance, in New Zealand and Australia. Lastly, he is the only bird, except the hawks and falcons, which is trained to assist man in the capture of living prey ; and in this vocation he is of all

birds, by sense, memory and affection, incomparably the best.

Cormorant colonies are scarce on our eastern and south-eastern coasts. They need high and inaccessible cliffs in which to nest and roost together, and no such cliffs are seen from Flamborough Head to Dover. The main colonies of the Eastern Channel are those in the chalk cliffs of the Isle of Wight, where they are always known as 'Isle of Wight Parsons.' Thence the birds fly every day at dawn to their fishing-grounds, and thither each night they return at dusk, with the regularity of city men travelling home by rail. The business of the day is, so far as the writer has observed, as carefully regulated as their times of departure and return. The roosting-place on the cliff at Bembridge is invisible from the crest above, for at that point the brow of the cliff overhangs the face. At day-break the whole colony leave the crag, and flying up into the turf above, settle on a large slope which gives them a complete command for many hundred yards inland, and there arrange their feathers and complete their toilet after the night's repose. Then the company divide, flying in pairs or small groups, arranged in the perfect V formation, to separate and apparently predetermined fishing-grounds. In the Solent fish are less plentiful than they were, and each bird

seems to frequent some particular station, which it does not leave till dusk. The greater number fly out to sea, as if bound on a journey to France, but others are 'long-shore' birds, and may be seen at their posts throughout the season. Five or six haunt the buoys which lie between the 'Foreland' and the Nab Light. No strange cormorant is allowed to sit on these buoys. If one should appear, the local bird rises from the deeps, and, flying low and straight, charges the intruder and hurls him into the sea. Among the anchored sea marks are one or two 'cage-buoys,' inside which hangs a bell. At times a cormorant squeezes through the bars, which are set so as to make it possible to enter from without, but difficult to emerge. The bird would starve if not rescued; but to open the cage and eject the cormorant is no easy matter. The buoy rolls and swings, and the cormorant, ignorant of the intended rescue, 'holds the fort,' defending the entrance with the greatest courage. The ingenious lobster hunter of Bembridge Ledge undertook to release one of these caged cormorants. He not only opened the cage, but proceeded to catch the bird, with the same indifference to pain which marks his method of lobster-catching with bare hands and feet. The cormorant's beak cuts like a pair of shears, and his aim is as swift and

unerring as that with which he seizes the fish below water. But the bird was mastered, tied, and laid in the boat, though the captor's hands were cut in every direction. One pair of cormorants always frequent the harbour, where they find numbers of sand-eels. These birds are far tamer than the rest, seldom rising to fly unless the small yachts and 'half-raters,' racing round the harbour, approach within fifty yards. During a gale, when the harbour is too rough for small boats, the writer has seen a cormorant rise from the water, flap leisurely to one of the small yachts lying-up just opposite the sailing club house, and there sit, drying its feathers, within twenty-five yards of the quay.

On Christmas Eve a strong gale was blowing down the Channel, and the breakers made it difficult for the birds to go to their seaward fishing-grounds. As a cormorant cannot go long without food, several pairs spent the morning in diving and fishing inside the reefs of Bembridge Ledge, rising and disappearing at a few yards' distance from the line of shore. There they remained, using every minute of their time, until the roaring breakers on the outer ledge climbed the barrier, and filled the wide basin within with foam and tumult.



RELEASING A CORMORANT FROM A CAGE BUOY. *By LANCELOT SPEED.*



The brain power of this species is well illustrated by an account of its combined fishing parties, seen by Mr John G. Millais, in Table Bay, and described in his work entitled '*A Breath from the Veldt.*' 'Their ordinary method of fishing,' says Mr Millais, 'is that of diving in the shallows, after the usual manner of their species. But instinct (?) and an excessive abundance of their natural food has taught these birds that by uniting their forces a full stomach can be obtained with far less trouble than by the methods which they usually employ. With the exception of one species of North American pelican, the plan is one that is not followed by any sea bird that I know of. The cormorants, to the number of ten or twenty, form line, each bird being within a couple of feet of its neighbour, and swim along the shore at right angles to the beach, the bird nearest the land being only just able to float. In this manner they advance, constantly inspecting the water beneath by immersing their heads and necks, until a shoal of small fish is found. Then the whole line wheels at once shorewards, most of the birds diving together, thus frightening the fish, which escape before them in such large quantities that a number are forced right out of the sea on to the beach itself. These tactics are generally rewarded



by a plentiful repast, each bird resting on its breast among the stones, and gobbling up the fish as they spring on all sides, attempting to regain their natural element.' On the Chinese rivers, where from six to twelve trained cormorants are used to fish from a single boat, two or three birds will often unite to drive the fish from one to the other; and the experience of English sportsmen who have revived the old sport of cormorant-fishing, introduced by the Dutch in the sixteenth century, is that the birds are very intelligent and become as tame as dogs. In China, where the cormorants are domesticated, and reared from eggs hatched by common hens, they are *whipped* if they misbehave; and the writer inclines to think that a short dog-whip was used as an emblem of authority by the most successful of modern trainers of cormorants in this country.

## INLAND FISH AND FOWL



## FLOOD TIDE ON BEAULIEU RIVER

FLOOD tide on Beaulieu River is like nothing else in the South of England. The rising waters flow not over salt marshes and mudbanks, or between level flats and marshes, but up into the heart of the forest, fringed by hoary woods of oak and sound meadows bright with flowers, between banks from which the iris leaves droop into the tide and catch the floating seaweed on their spikes, until the whole river channel is filled brimful with salt water as far as the pool which sleeps by the foot of the Abbey of Beaulieu.

As the flood moves on, all kinds of sea migrants come up by air and water, flying or floating between the oaks that fringe the river on either hand. Over the water the cormorants come flying high, on their way to Hatchet Pond on the heights of Beaulieu Heath, and gulls and terns flap over the surface, following the fish that follow the flood. Sailing in a boat down against the tide one sees the sea

creatures travelling from the Solent into this contrasted region of inland forest and fields. In the centre the channel is black and deep, marked by 'booms' at the curves and turnings. There the main current swells onwards fast and strong, and the fish follow it. There one dimly sees the sea-trout travelling upwards, flinging themselves now and again from the dark water, and hurrying up to the Abbey pool, where they play under the sluices till the tide begins to turn, or linger and are caught before the waters once more deepen. With the sea-trout come shoals of those fair impostors, the grey mullet, beautiful to look upon, but poor and tasteless to eat, for they live on vegetables, and, like most vegetarian fish, are lacking in flavour. Not that the fishers of the South Coast will agree to this, for to them a mullet is a mullet, whether grey or red, and they would gladly persuade others to adopt their view, for grey mullets are large and plentiful, while red mullets are small and scarce. With the mullet come also the sea-bass, big, lusty fish, sometimes of ten pounds weight. Flounders go foraging over the flats, and dart back into the deeps as the boat's shadow approaches, and a host of smaller fry coast along the shallower waters and pry into the creeks and land streams. But perhaps the strangest sight in this

forest-beset river, over which the larks sing and pheasants make long flights from shore to shore, is the procession of huge medusæ — jelly-fish — swimming gently up with the flood. Most people look on a jelly-fish as something which stings people when bathing, or as a nasty wet lump lying on the beach. Bathers naturally avoid them; they are shapeless and uninteresting on shore, but things of beauty when swimming up the Beaulieu River. In the darkest water one sees opalescent, half-transparent creatures, like the half globes set on modern lamps, just below the surface, some deep and scarcely seen, some floating a foot below the water. At the bottom of the globe are rings of orange, sometimes in double 8's, sometimes in more complicated patterns. The creature does not merely float with the current, but 'breathes' itself along, alternately opening its translucent body like a wide bell, then contracting it, and gaining impulse which enables it either to swim ahead or to rise and sink at will. Round the mouth of the bell is set an almost invisible fringe of glutinous threads, sweeping the waters for the invisible atoms of food, living and dead, which swarm in the shallow waters of the tidal stream. At three-parts flood, when the mullet are running up the central channel, the mouth of each little forest rill or brook becomes itself a tiny

model of the big river. Instead of oak woods, on one side is the white thorn hedge, and on the other meadow grass and sweetbrier bushes. But in its channel the salt waters rise to meet and overwhelm the sweet waters from the forest, and with the salt water comes the vanguard of the sea fishes and sea creatures following the tide. The great jelly-fish, with the sea-trout and bass, do not come exploring up these tiny creeks; but there are plenty of other migrants from the deep which are more adventurous. Thus in the clear pools, overhung by branches of hawthorn in blossom, and set round with land flowers, crabs are prying for food among the submerged roots and grasses, and smelts and young bass cruise about within a few feet of the buttercups and daisies. The fish come up exploring, and largely from curiosity; but the crabs, large and small, are there mainly on business. They have to get all their meals in the last hours of the flood and the first of the ebb, or there is a chance of being left stranded. At the same time they are very vigilant, and rush off to hide the instant anyone appears on the bank. Then they gradually emerge, and are soon busy exploring their temporary quarters, and tasting all the striking novelties in the way of food which a land rill temporarily raised to double its usual depth by salt water affords. Into one pool, some four



THE BEAULIEU RIVER. *By* LANCELOT SPEED.





feet deep and as clear as crystal, a steel rail, from a brickyard near by, had fallen, and lay sloping from the mouth of a culvert to the bottom of the pool. It lay sideways, and the hollow between the two flanges was just the right 'gauge' for the average estuary crab to run up and down it sideways. The crabs had made this rail into a combination of a 'parade' and a road for heavy traffic, some running up and down it for amusement, while others dragged bits of rubbish which struck them as valuable from the pool to the shelter of the culvert. On the bottom other crabs of all sizes, from that of a saucer to a sixpence, were scuttling about. Then the sea fish came cruising up this yard-wide river, beautiful little opal-sided smelts, and small lance-shaped fish of the same size, with bright eyes and brown scales of the tint of the red-bronze alloy used in Japanese metal work. The banks of these brooklets are steep, and their beds deep, cut in the clay by floods. But by the side of the main river, where the high tide overflows the levels of the mowing grass, in the little flats between the oak woods, there is a margin of 'debateable land' with a separate vegetation of its own, lying between the mud and the glasswort of the tidal channel proper, and the buttercups and clover in the mowing grass. This 'salted' zone is covered with myriads of flowers of

thrift, looking like great beds of pinks, on which flowers grow so close that their petals almost touch. On these pink couches the swans and wild ducks sit sunning themselves when they leave the water by the little channels which wind among the thrift, and on the margin by the stream the peewits wash and dry their feathers. Swans which have had their first clutch of eggs destroyed nest among the thrift. Each pair has one of these smooth savannahs or 'flower prairies,' in which they pile up a big nest of seaweed gathered in the stream. The hen sits on this, while the cock bird keeps guard in the river. Some of these nests are raised to a height of more than three feet above the level of the marsh, and are entirely surrounded by water during a high tide.

At other points the oak woods fringe the river for miles, with great trees drooping over the deep channel where the main stream curves to the bank. There the transition from the bird and insect life of the shore and salt marsh to that of the English woodland is most marked. Brilliant fritillary butterflies dance down the glades, and all the minor woodland birds swarm among the copeswood and oaks. The writer watched what were probably two successive broods of long-tailed tits united and hunting through the wood. They were crossing

a road of some width from one side of the wood to the other, and no less than thirty-four passed the boundary. They shot across the side like blunt-headed arrows, their long tails straight behind them, and though the party took some time to complete their transit, not one was left behind. This would give an average of sixteen young ones in each brood, while the two old birds made up the total. Close to the river a pair of nuthatches have devoted unusual care to the outer appearance of their nest, or rather of the hole, inside which the young ones are now nearly grown up. The hole, not more than one inch in width, is in an apparently sound oak trunk. It is hollow, but the bark is still sound, and the entrance hole must have been made by some accident, by which a small knot was torn from its socket and with it some six inches square of bark. Below this lies sound wood; but the nuthatches were not satisfied with the appearance of the tree where the bark was torn away, though the wound had 'weathered' and was just assuming the grey colour of the bark. The birds had plastered the whole of the exposed wood over with 'compo' made from sand and mud, and brought up to the level of the bark on either side, so that the surface of the tree was almost the same as it had been before. This plaster was

as hard as brick, made of some gritty material into which a pin point would not penetrate, and which could only be separated from the wood by putting a knife in between the plaster and the foundation. Our experiments were of the non-destructive order, but as soon as we left the tree the two old birds ran down the trunk, head downwards, to examine the nest and see that all was safe and in order.

## THE BIRDS OF BEAULIEU

No estate in the South of England offers such attractions to bird life as that of Beaulieu between the New Forest and the Solent Sea. Its tidal river goes up into the heart of the forest, between seven miles of oak woods and coppices; its lakes swarm with duck which come in by day from the sea; the gulls and cormorants fly daily to the pools on the heath to wash in the fresh water; woodcocks nests in its pine woods and fly squeaking like bats across the rides at sundown; and behind it lies the forest, and the forest heaths with a separate bird population of their own. The heath at Hill Top, as the part of the forest north of the Beaulieu boundary is called, is an epitome of the beauties of the wild forest. Here for eight hundred years Nature has had a free hand, and the contrast shown by land with which man has meddled for centuries and that on which he has scarcely been allowed to set foot is evident and

astonishing. The 'tame' woods and fields within the manor bank, beautiful as they are, show in every acre the enormous modification of Nature due to man. There is almost nothing there in which seven centuries of cultivation have not produced a profound change, though that change is so general throughout our island that we have come to look upon it as normal. There is nothing from the grass on the earth to the waters which fall from heaven, which man does not in some way change from its natural order. Every shower which falls on those broad woods of oak and pine—each tree of which was planted by hand—is led away to the river, or its natural flow diverted by the ditcher's spade. The grass and flowers beneath them are protected from cattle, and grow in unnatural luxuriance between the stems. Not only the sown crops but the less obviously artificial elements of grasses, hedge flowers and underwood, the unnatural result of felling higher timber, the divisions by banks and hedges, the hard roads, gates and buildings, the presence of hundreds of acclimatised or greatly modified animals not natural to the soil—sheep, store cattle, heavy draught-horses, and birds of hardly less artificial breed, pheasants raised in hundreds from the coops, partridges dependent on the cultivation for their

living, and the host of smaller creatures living in commensalism with man, and following the plough as 'trade follows the flag'—are the outward visible signs of the triumph of man over Nature, a conflict and false triumph which would neither be noticed nor regretted but for the survival of Nature unsubdued in her wild forest beyond the manor bank. To picture this 'state of Nature' it is not enough to subtract each and every one of the items of domestication given above. Nature is constructive, and has made the wild heath and forest something more than the negation of the tame manor, and planted her woods, set out her heaths, levelled her lawns, bordered her streams, trimmed her shrubs, hollowed her pools and water brooks in inimitable fashion, besides making one thing which cultivation has never tried at all, and probably could not make if it tried, the spongy soaks of the New Forest bogs, with their unique carpet of mosses and primitive flowers. To these heaths, furzebreaks, woods, streams, alder beds, bogs, brook-sides and pools, the forest birds flock each after their kind. *Natura loci*,—the nature of the place absolutely determines the number and nature of the inhabitants, whether birds or beasts. No rotation of crops, or tree-felling, or ploughing, or laying down to grass, brings any change; the same birds



and beasts and flowers are probably now to be found in the same spots of this heath as they were when King John founded the abbey below. Round the edge of the manor bank, and stretching for thirty yards into the forest, runs a riband of the finest turf, grazed short as plush by the ponies. This is the last haunt of the grain-eating birds of the manor. Then the rough heath begins, deep heather, little seedling firs, and junipers. It was to see the birds of the forest that the writer last visited the heath. Whin-chats were flying from top to top of the bushes, or feeding their young, hidden in undiscoverable nests among the heather labyrinths at the roots of the bushes. On the brow of the hill two of the primeval woods of the forest stand in the sea of heather, divided by a valley which warmth, shelter, and running waters combine to make into a paradise for the smaller forest birds, while the two ancient woods are peopled by the carrion crow, hawks, brown owls and woodpeckers, which breed in the huge forest trees of these hoary woods. The streams which soak out of the bogs on the higher heath cut a narrow channel below the wood, and creeping from pool to pool, bordered with alder and the dwarf willow of the forest, collect into a miniature lake at the bottom of the valley. The banks of this stream rang with the song of the black-cap, nightin-

gale, white-throats and linnets. The briar bushes and juniper tufts held numbers of their nests, and in the tall furze bushes which had survived the frosts of 1894, stone-chats, whin-chats, and the rare Dartford warblers were in incessant motion, the greater number being engaged in catching insects and carrying them to their young. In the ancient thorns and hollies which fringe the wood the turtle-doves were nesting in numbers. In one of those bushes so often seen in the natural Forest, in which a thorn, a crab-tree and an oak have all grown up together, a turtle-dove was sitting on her nest. When she found that she was discovered, she at once fluttered to the ground, and lay apparently disabled on the turf. Willing to encourage the bird in the belief that its artifice was successful, we ran towards her, when she rose and slowly fluttered up the grassy glade, then rose and flew a few feet, and when at some sixty yards from the nest, took wing and dashed off into the wood. This wood at Hill Top is one of the ancient groves of the New Forest, in which the oak, and not the beech, is the dominant tree. But every species of native timber flourishes there—ash, yew, beech, the thorn, elm, and holly—while the browsing cattle keep the lawns clear of underwood, and crop the grass as level as a tennis lawn.

To step from the cool shadow of the woods to the blazing sunlight of the heath, then to pass

from the cocoa-nut scents of the blossoming furze to the quaking bog, where the waters lie in soak in mosses five feet deep, is one of the charms of Beaulieu Heath. The surface of these upland bogs is set with danger signals, easily read by every forest rider,—tufts of cotton-grass, waving in the wind. Slender rods of grass, each capped with a tuft of white, like a pinch of white floss silk, grow from the moss cushions. Through the mosses, yellow and pink and golden green, white spikes of orchis grow, so loosely rooted that they can be drawn out with their roots white and as clear of earth as if they had been standing in a vase of water. On the edge of the bog, but on firm ground, are little starry beds of sundew, whose plants are busy all day long catching the midges of the heath. Each plant is couched like a tiny scarlet star, patterning the ground like the tiles on the front of some Central Asian mosque.

In the smaller grove which overhangs this bog a hen cuckoo was receiving visits from her lover, who made the wood echo with their rival calls, not only the loud 'cuckoo,' but long trills, low bubbling cries, and a mechanical parrot-like chuckle, form part of these forest cuckoos' vocabulary. Starlings were nesting in the hollow stems of the big hollies, and we flushed a hen pheasant, on the way to the water with her brood. By this time the forest ponies had discovered us, and

came up with their foals to reconnoitre. As we remained still, and seated, they grew bold and advanced, neighing, to within fifty yards. But each mare kept her foal on the side farthest from us, a position which it retained when the troop galloped off.

The banks of the tidal river below are the haunt of a separate community of birds, or rather a place where the most unlike species meet and live together. Hen pheasants with their young broods and wild ducks with their ducklings may be seen together on the paths through the woods, feeding on the caterpillars which drop from the oak trees. At low tide the pheasants, in their turn, visit the shingly shore, and join the wild ducks and their broods in roaming along the exposed river bottom seeking food. Near 'Buckler's Hard,' where the battleships were built in the old war, the woods recede from the river, and enclose a marshy meadow bordering on the stream. This meadow, planted with furze on the land side, set with tussocks and rushes towards the river bank, and fringed by the thick woods, contains more varied bird life than any similar area which the writer has seen in England. Redshanks and plovers nest in numbers in the marsh, and on the occasion of the writer's last visit, besides the young of these species, there were found in this meadow the nests of the white-throat, the black-cap, the meadow-pipit, the yellowhammer, the whin-chat,

the chaffinch, the greenfinch, and the pheasant. The numbers of nests were even more remarkable than their variety. The furze seemed to hold a nest in nearly every bush. Twelve linnets' nests, holding either eggs or young, were found in an area of not more than half an acre.

## THE BIRDS OF PARKS

WHEN Frank Buckland, by special request, took down a London bird catcher to Aldermaston Park in Berkshire, to exhibit the art and practice of bird-catching with the clap-net, the expert's report on the bird population of the park was as unexpected as it was discouraging. The old man rose early and walked round the park and among the big trees before the dew was off the ground, when all species of birds are tame and easily seen. The result was that though he saw 'plenty of jays and woodpeckers,' there were almost none of the hardy song birds—linnets, goldfinches, chaffinches and red-poles—which are the main object of the bird catcher. If he had cared to make a more exhaustive inquiry he would probably have discovered that most of the common birds of hedgerow, garden, copse and roadside were absent from, or scarce in, the precincts of a park. The contrast of bird life in such natural wilderness as the borders of the New Forest groves,

where the heather bogs and flower prairies of the open ground run up to the edge of the woodland, and that of such parks as Richmond, Cassiobury, or any of the five hundred English deer parks, whose main features are rich grass and great trees, must strike every visitor. On the forest border every thicket and gorse bush seems alive with birds in the first warm days of spring, and the variety of species is no less than the number of individuals. Whin-chats and stone-chats, pipits, larks, white-throats, wood-warblers, redstarts, turtle-doves, yellowhammers, buntings, wrens, plovers, pheasants, crows, kestrels, all the birds of moor, marsh, wood, coppice, hedge and thicket haunt this natural wilderness. In our parks, though the number of birds is considerable, and that of certain kinds often greater than is seen elsewhere, the number of species commonly seen is so limited that we may infer that our English parks as we usually see them are a much more artificial type of scenery than is generally believed. They are so old, and we are so used to their general features, that we have begun to look upon them as survivals of the primitive woodlands. In nine cases out of ten they are not, and for this we have the testimony of the birds. There are, at least, a hundred species which would no more choose by free will to live in a park than a born

'commoner' of the New Forest would choose to live in Camden Town. On the other hand, the centuries of 'specialisation' which have created our park scenery, producing much to admire in the form of great and ancient trees, but little to eat (from the birds' point of view) on the uniform covering of herbage, have encouraged a limited number of species to become almost native to their inclosed precincts, from which in purely arable counties like Suffolk and Essex they scarcely ever move into the open country round. Chief among these are the green woodpecker, the lesser spotted woodpecker, the jackdaw, the kestrel and the stock-dove. Where there is water in the park the wild duck and the coot may be added to the list. Their voluntary confinement to the limits of the park railings varies in proportion as the surrounding country resembles park scenery in character. In most cases it does not and cannot, and in these districts the park birds form a race apart. Of these the jackdaws are the most representative class, and most entirely 'parasitic' on the park acreage. Even near London it may safely be assumed that nine jackdaws out of every ten have their home in the hollow oaks of Richmond Park, though the Long Walk in Kensington Gardens and the number of hollow trees left round what were once fine country houses, now



swallowed up in the suburbs, induce odd pairs to remain outside their great colony on Richmond Hill. In Helmingham Park in High Suffolk, the jackdaws were so entirely confined to the old deer park that in villages at a couple of miles distance a jackdaw was never seen, and a jackdaw's egg never taken. Yet the hollows of the old oaks and elms of the park were choked with their nests. As many as three pairs built in a single tree, though from what sources they obtained food for their young was never very obvious. Their nests were finished with the most appropriate material, for in every case the lining was the fur of the red-deer. The hundreds of hollow trees are clearly the attraction of parks to the daw tribe. They like them as resting-places, and the number of the trees enables the birds to nest in company. Probably a ruined castle or a dilapidated foreign cathedral suits them even better. But as we have few ruined castles to offer them, ruined trees are most acceptable; and these in our practical country are only found in numbers in the old groves in parks.

There also the stock-dove mainly abides. Its habits seem to be in the transition stage, between those of the cave-haunting rock-pigeon and the emancipated wood-pigeon, which builds by preference on the branches of trees instead of in holes. The

stock-dove finds its 'half-way house' in the ruined trees, where it lays its eggs on the decayed wood, with little more than an apology for a nest. In the early morning the 'crooning' of the stock-doves inside the hollow trees fills the groves. The bird is a 'ventriloquist,' or the sound is modified by the caverns and passages by which it finds its way to the outer air, for it is almost impossible to identify the part of the tree from which it proceeds. Though wood-pigeons, and even the migratory turtle-doves, have much increased in numbers during the last ten years, these park-haunting stock-doves are no commoner than of old. Perhaps the reason is that the area of suitable nesting-places does not increase, as in the case of the wood-pigeons and doves, who benefit by the steady growth of preserved woods and plantations. Perhaps, also, the jackdaws are bad neighbours and steal their eggs, as they do those of the pheasants. Those in one park in Sussex were known to have stolen seventy pheasants' eggs last year, and no doubt other birds are plundered. Passing through this park the writer saw an unfortunate green woodpecker struggling in a trap set in a hollow limb to catch the marauding jackdaws. Both these and the lesser-spotted woodpecker are in many counties scarcely ever seen outside the parks, where, owing to the protection given by

recent Acts of Parliament, they are increasing fast. The quantity of old dead wood, dead and dying trees, and swarms of parasitic creatures in the bark, just suits the woodpeckers, who have to go further and fare worse in new or thriving plantations. Too much supervision and lopping of dead limbs should be discouraged in old-established parks. It drives away the few large birds which are really ornamental, and does not greatly arrest the decay of ancient timber of the picturesque kind—pollards, old Scotch firs, and chestnuts. In one park, at no great distance from London, two groups of Scotch firs held six nests of the green woodpecker last spring, the whole of the increase being due, it is supposed, to the respect felt by the keepers for the provisions of the Wild Birds' Protection Act. Formerly the woodpeckers were shot at sight, there being an ancient and not altogether unnatural belief that they stole pheasants' eggs. Ants' are the only eggs which the woodpecker seeks on the ground, though it destroys those of tree-haunting insects. Kestrels are a park hawk, unlike the hobby, and occasionally the sparrow-hawk, which naturally prefer the thicker woodlands. Yet their nests are not so common as might be expected from the abundance of high, isolated timber and the swarm of field mice and beetles in the rough deer-fed herbage in the groves.

Wild ducks, which naturally prefer rougher and wilder ground, have become park dwellers by force of circumstances. They are protected on the lakes, and consequently stay in ever increasing numbers to breed in the neighbourhood which experience has taught them is the safest, if not the most convenient. At the present time all the ducks are sitting, often in nests placed high up in the hollow crowns of pollards, for the open grassland of the park gives little shelter as nesting-ground. In the evening, towards six o'clock, the male birds leave the water to fetch their mates off the nests for an evening walk, and these most conjugal of birds may be seen walking in pairs in all directions under the high timber, enjoying a brief respite from domestic duties.

Partridges bred in open parks are of quite different habits to the normal ways of their race. They scarcely ever remain on the ground on which they pitch, but run for hundreds of yards as soon as they alight. They have no fixed resorts for different hours of the day, but roam from one part to another as the fancy takes them. They 'dust' round the roots of the trees where deer or rabbits have worn away the grass, and drink at mid-day, when they run great distances across the grass to their drinking-place. The minor birds which haunt

the great trees are all insect-feeders, and mainly dependent on those creatures whose larvæ and eggs are found in the bark. In the oldest groves these birds are numerous enough, but there is no such variety of species as in the gardens or on the commons and copse sides. Blue-tits and great-tits, tree-creepers, and insect-eating birds which nest in or against old trees, such as flycatchers and redstarts, complete the list. Even herons, which rarely leave the shelter of large demesnes, seem to prefer to make their heronry in the woods attached to them rather than in the unfenced groves. The raven, on the other hand, whose former nesting-place is generally remembered by local tradition, was a park-haunting bird. Almost the last raven's nest built inland in Southern England was placed in Petworth Park in Sussex.

## THE HAUNT OF OUR SUMMER FALCON

THE hobby, our 'summer falcon,' was formerly a rare bird in most parts of England. Recently, owing to the feeling against killing down our raptorial birds, it has much increased in numbers, and in some counties, especially on the upper Thames and in the great woods of Berks and Oxfordshire, it is now commonly seen. In form and colour, though not in size, the hobby almost exactly resembles the peregrine falcon; but, unlike the peregrine, it is a migrant, reaching this country rather late in the spring, but always returning to the same neighbourhood, if not to the same tree, to nest.

At one point on the Thames, where the Thames joins the Isis, two pairs of these falcons were last year nesting within a mile of each other, and this spring the birds have reappeared in the same haunts. One pair have chosen for their nesting-place the most beautiful corner of the great wood, to which they annually return from their winter home. One

wonders whether the birds, whose recollection of the homeward journey is so unerring, ever recall to memory the picture of the haunt to which they are returning, and contrast the wood by the banks of the Isis with the deserts and palm groves of the river of Egypt, or the plains of Southern India. The nest is built in a tall oak on the margin of the wood, where it abuts on a meadow now ablaze with buttercups, below which lie the river and the white waters of the weir. Close to the tree in which the nest is placed a spring rises, inside the wood, and fills a deep round basin with clear water, paved at the bottom with little white land shells. The overflow of this spring is the falcons' drinking-place and bathing-pool, judging by a few feathers which are scattered on the surface. Round the spring, and by the banks of the rill which flows from it, and beneath the thousand oaks of the wood, is the second crop of spring flowers—the 'temperate flowers' of the English woodlands—for which the falcons have exchanged the dusty plants of the Nubian rocks, and the lotus and reed flowers of the swamps of the Nile. For colour and scent the wild hyacinths take the first place. The whole wood is perfumed with their odour, and its ground surface, alike in sunshine and shadow, is stained in great patches with the dark blue spikes. On

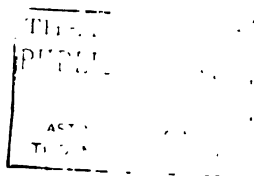
the driest and hardest turf in the wood paths, and where the copsewood was cut down last winter, the leaves and blossoms of the wild strawberry carpet the ground. With this are mixed beds of purple eyebright, and the pure blue and white of the speedwell. In all the damper parts of the wood the young teasle plants, like great green stars, break through the ground, and purple orchis and arum are scattered throughout the wood. In the quarter which the hobbies chose for their home many oaks were felled, and their stems and limbs, stripped of their bark, and redolent of tannin, lay in all directions among the blue-bells and ground-elder. When the nest was approached, the birds, according to their usual habit, came circling round the tree, screaming and dashing in anxious flight down and among the vistas of the wood. The oak was an easy one to climb. One of the big wicker crates used for carrying the oak bark made a platform from which to reach the first limb. Thence further progress offered no difficulty, and the nest was reached in due course. The eggs were not yet laid, but the nest was beautifully lined with rabbit's fur, unlike the rude platform of sticks on which the young sparrow-hawks and kestrels are reared in the adjacent wood.



In September last, when the rainstorms which fell daily cleared towards evening, and the setting sun flooded the harvest fields with welcome light, the hobbies were our daily companions in the shooting field. There were two broods of young birds on different parts of the ground, which were then being taught to fly, though regularly fed by their parents. One family of young hobbies haunted some very tall elms near the Thames. The second brood had their dwelling in the wood, from which a hundred-acre field of barley, standing in stooks, stretched away to the top of a rounded hill. Over the shoulders of this hill the evening sun streamed in broad beams between the barley-stooks, which in turn sent grey shadows down the stubble and on to the oaks of the great wood which fringed all the lower limits of the field. There at that hour all the partridges of the neighbourhood used to assemble to feed among the barley-stooks, and enjoy the warmth and brightness of the evening sun. There also we went in search of partridges, and the hobbies used to wait for us by the margin of the wood. As soon as we appeared they would dash out over the stubble and circle round high in the air, apparently in the hope that some very young and weakly partridge or moulting lark would be



**A HOBBY. *By A. COOPER, R.A.***



flushed to make their supper. Their curiosity grew each evening, until the hen bird would make a complete circle at full speed at a distance of not more than twenty yards, her bright black eye fixed and gazing as she dashed in front of my face. As she rushed past, with wings not so much beating as vibrating, the head motionless and sunk between the shoulders, like a hawk-moth, and back and shoulders as blue as a plum, she was the image, in miniature, of a peregrine rushing full speed to take the 'lure.' Another pair, also with a brood of full-grown young, used to join the shooters on the flats, and though less confiding than the hobbies of the hill, they sometimes chased a lark, or even a young partridge. One of the old hobbies caught a half-grown partridge, and carried it to a row of heaps standing in the open field. The young birds saw the capture, and one instantly flew across to demand a share of the food, screaming and pursuing the parent bird from one heap to another.

Another very beautiful haunt of the hobby was, and probably is still, at a point higher up the course of the Isis, at Godstow, not far from Rosamond's Bower. There, too, the birds had built close to, and almost above, a running spring of water in a wood, near to the main river. The whole course of

the rivulet was not more than a few hundred yards, from its source to the point where it fell into the Isis, and the greater part of this lay in the wood. There it wound deviously round the roots of huge grey poplars, making at every turn a pool, which was a perfect model in miniature of the pools of the Isis itself. These clear basins were bordered with masses of purple and white flowered comfrey, water-dock, and ranunculus, and floored with stones and shingle. Small perch, small pike, loaches and minnows swarmed in the deepest holes, and the kingfishers were as busy catching these, and carrying them to a hole among the roots and earth at the base of an uprooted poplar, as the swallows and swifts were in snapping up the may-flies on the main Isis stream. The wood was also a favourite haunt of cuckoos, probably on account of the swarm of insects breeding in its stream, in its rank undergrowth, and among the willow stems and osiers. The hobbies seemed to arrive in the wood some days later than the cuckoos, being almost the latest migrants noticed there. Their nesting operations consisted only in the annexation of an old crow's nest, in which they laid their eggs without any of the attention to comfort shown in the nest above described.

In the vale of the 'White Horse,' among the thousands of acres of richly-wooded meadows, and

by the banks of the old canal, the hobby is quite a common bird. From May till the end of August he haunts the vale, nesting there, and exhibiting fine feats of flight and a most vociferous anxiety when his nest or young are near. One most charmingly situated nest was in a sloping meadow at no great distance from the canal, in which 'Tom Brown' first learnt the art of fishing. The long meadow, bordered on one side by a break of oaks and thorns, had in its centre a beautifully grown clump of elms, tall, elegant, and with branches springing from their stems at such regular intervals that the foliage surrounded them, not in shapeless masses, but in level tiers, with space and light between each shelf of green. From the centre of this 'Hall of Columns' a blue hawk dashed out, and wheeling round in the air like a giant swift, showed its species beyond doubt. The nest held four eggs, rounded and blunt at either end, and covered with minute reddish splashes and dots of pinky grey. In the autumn, before leaving the country, these birds come up to the edge of the open land abutting on the downs, and though insects, beetles and moths are said to form the greater part of their food, they may occasionally be seen to give chase to a lark or swallow, pursuing it at a speed comparable to nothing except the rush of the peregrine falcon. Young birds taken from the nest, and brought up

to fly to the lure like a falcon, make beautiful and charming pets, though their deficiency in the killing instinct in respect to other birds makes them useless as falcons for the chase.

## OWLS' NESTS AND OWL TREES

OWLS are 'up in the world' at present, and can look forward to a good time for the next generation. So much has been said and written about their usefulness that they are now beloved of county councils, and even gamekeepers leave them in peace. Recently I had an amusing instance of this change of opinion. I mentioned to a keeper, at a place which I was visiting for the first time, that I 'wanted a few owls' and kestrels' eggs.' The keeper looked severe, and came out 'pat' with a long rebuke, which might have been an extract from the Selborne Society Report. He finished by producing an extract of the local county council forbidding their eggs to be taken. Some years ago, in Suffolk, when owls were in very 'low water,' with hardly anyone to say a good word for them, I joined my brother, now the Rev. J. G. Cornish, of Lockinge, in making some practical researches into their old haunts and surviving numbers. Careful inquiry and much hard climbing showed



that the distribution of the owl population coincided geographically with the number and situation of the farmhouses. Nearly every large farm had its owl tree, or reputed owl tree—one, and no more. At this time the owls were perhaps more persecuted than any other bird. The consequence was that the number of reputed owl trees was greater than that of those still inhabited. But the evidence of the old farm hands was always trustworthy. If they stated that such a tree had 'belonged,' as they phrased it, to the owls, an inspection of the big hollows nearly always showed remains of the pellets cast up by the birds, which, consisting of bones and fur, and kept dry in the hollow limbs, last for years. The inference from these explorations was that every farm would, in the course of Nature, have at least one pair of white owls to keep down the rats and mice in its stackyard, and that if they were preserved, the old deserted owl trees would soon be restocked.

After climbing some twenty of these trees, it was possible to generalise as to the kind of tree which a white owl prefers to live in. They were in nearly every case very old pollard elms. These commonly stood in the fences of the home paddocks and meadows, huge, gouty, gnarled trunks, with great 'plum puddings' and warts on their bark, mere shells of trees, often so broken that the bark and

twigs grew *inside* the shell as well as outside. The most decayed were used by farm boys as temporary shelters from the rain, or cupboards for storing farming tools away in. Others rose with sides unbroken to a height of thirty feet, where the crown of the pollard opened. The 'crown' of a big pollard is nearly the most confusing and shapeless thing in the vegetable world. If the trees are pollarded once only, and then allowed to spread their arms unhindered, the growth is regular and beautiful. The branches spread like a fan, as in the Knightwood Oak of the New Forest. But the crowns of the trees which have been 'shrouded' every five years for a century or more, split, curl, crack, and distort themselves till they are more like a piece of furnace slag than a tree top. To reach them except by a ladder is almost impossible. The outward bulges baffle the best climber, even if he can work his way up by the aid of the knots and little twigs which grow like 'famine-down' on the ill-nurtured old trunk. The centre of the crown is formed by the widening of the original 'split' of the shrouded pollard, and makes a kind of platform walled round by the ruins of what should have been branches. The floor of the platform is made of rotten wood, mould formed from the leaves of a hundred autumns, and dead sticks, mixed, if it be a genuine owl tree,

with the bones and fur of finely-pulverised mice. The bases of the branches, or what should have been branches, are hollow shells, often measuring a yard across, with various holes, bulges, knots and cracks, some piercing the sides, some only making side chambers and shelves. These caverns are the chosen home of the white owl. In one she sleeps, in another she lays her eggs, in a third she has her larder when the young owls are growing up. In another similar tree, if one be near, her husband sleeps by day; and from any one of the doors or windows she slips out and flies noiselessly across the meadow when the intruder scrambles breathless into the crown of the old tree. There is such a labyrinth of passages in the hollow chambers that to find the eggs is not easy, even when the place of the bird's exit is marked. The first set we ever found numbered six, and were discovered on March 4th. They were as round as an orange, with chalky white shells, and laid in a hollow in a deep bed of 'pellets.' Three eggs were taken (it was before the days of county councils), and the owl laid three more. A farm boy caught the owl next week and took her eggs. We bought the bird, set it free, and in the course of a week it was back in its old tree, laid four more eggs, and eventually reared the brood. These white owls naturally attach them-

selves to human inhabitations. They are part of the natural 'stock' of any good house with old trees, cultivation, and the pests of cultivation, rats and mice.<sup>1</sup>

The brown owls are even more interesting birds, for they are larger, show themselves more, and are quite vociferous in spring, hooting cheerfully by six o'clock in the evening. But they are not so highly domestic. 'Wood-owls' is a common name for them, and they are constantly found far away from houses in the depths of the big woods. Though the writer has never discovered the nests in such places, it is probable that the brown owls there lay their eggs in the deserted crows' and magpies' nests, as the long-eared owl does. In the New Forest, one brilliant spring day, in the centre of the ancient wood at Mark Ash, with no human dwelling near except a charcoal-burner's hut, a number of these wood-owls were hooting and calling at mid-day, making the wood ring with the long notes. There must have been three or four pairs answering each other. But the brown owls quite commonly nest near a house. In one case the eggs were laid in an old stump not three feet from the ground. In the garden of Childry Rectory, near the White Horse Hill, white owls

<sup>1</sup> Near Dorchester some young owls were taken from the church tower and put in a hen coop. Next morning fifteen dead sparrows were found lying outside, brought there by the old birds.

nested in a pollard on one side of a walk, and brown owls in a hollow standard elm not twenty yards off. The eggs are much larger than those of the white owl, and the young birds seem to grow their feathers more quickly. A young white owl is like a ball of swan's down, with two bright black eyes half hidden. The brown owl also has beautiful dark eyes, not like the staring yellow orbs of the eagle-owl, and the sight of half-a-dozen pairs of these solemn eyes in the heads of as many owlets, all cuddled together in their wooden cavern, and staring at their visitor as he peers in at their window or door, is both pretty and amusing. The copses and plantations scattered all over the Berkshire and Wiltshire Downs are inhabited not by the brown or white owl, but by another very interesting bird, the long-eared owl. In this particular district they are quite common, more so than either of the other species in the parts they affect. Nearly every copse has a pair, and if carefully sought the birds may generally be seen. They sit quite motionless on a fir branch, close to the bark of the stem, which the longitudinal streaks and blotches on their breasts much resemble in colour. In these copses the trees, especially the tall spruce firs, are full of big nests, crows', magpies' and squirrels', which last for years. The owls flatten down a crow's or old magpie's nest, usually the former, fill it with

dead sticks, and lay from four to six white eggs. These must sometimes be blown out, for the platform has no rim, and no soft lining of any kind. When the young owls are hatched, their sharp claws enable them to stick to the platform, however much the spruce fir rocks in the high winds. They and their neighbours, the young kestrels, live almost entirely on the field mice, which the hawks catch by day and the owls by night. No one disturbs them, though in the preserves, the keepers say, as is probably true, that their hooting and flight at night sometimes 'stampede' the hundreds of young pheasants roosting in the trees in September, and cause some loss among the birds. The short-eared owls only nest in any number in this country when some phenomenal plague of mice or voles appears. The recent vole plague in the Scotch Lowlands is the best authenticated case of this natural increase of the owls *pari passu* with that of the pest. One shepherd found fourteen nests of this owl on his ground. The testimony to the services rendered by the owls during the vole plague, given before a Parliamentary Commission, is sufficient to justify complete protection by law for all the four species common to this country.

## A GAME FARM IN AUGUST

IT has been noted as an unexplained fact in natural history, that while large poultry farms are as a rule unsuccessful, most game, with the exception of grouse, can be reared in any quantity with no great risk of disease. Farms on light soil can be converted into game colonies in a short time and with little trouble, and if the remuneration is not great, the risk and outlay are also inconsiderable. Situation is the most important element of success in all artificial experiments to increase natural production. The centre and sanctuary of a recently established game colony, to which I made an expedition last summer, forms a portion of the most ancient downland of Wessex, covered with natural grass and studded with clumps and single trees of thorn, elder, ash, and seedling fir. This natural growth of trees is peculiar to the hollows of the high downs. Where it occurs, winged game of all kinds seek it during the heat of the day, and rabbits and hares exhibit a particular liking for its scanty cover, and travel considerable distances to

restock it if from any cause its native inhabitants are killed down or driven away. Some fifty acres of this favourite ground, lying not in a hollow, but on a gently sloping hillside on the inner uplands of the downs, has been inclosed as a sanctuary. A fence of wire-netting four feet high, boarded at the bottom, and supported by a wire cord running along the top, forms the outer defence of the precinct, and converts the whole interior into a protected warren suitable for an innumerable population of rabbits, and for hares, if the latter are supplied with artificial food. The latter can easily leap the fence, which only forms an inclosure for the rabbits and very young game birds. But it acts as a protection against dogs, which, though able to leap over it, seldom do so unless in actual pursuit of game, while foxes look on it with suspicion, fearing a trap, and unless strongly tempted, prefer to seek their supper outside the lines of wire. The ground within the inclosure has undergone surface change since it has been withdrawn from the tread of sheep and cattle and made the home of game. The looseness of the soil beneath the grass has attracted millions of ants, and acres of the inclosure are without a square yard of smooth ground, the ant-hills standing side by side like peas in a box. Wild thyme and a small yellow rock-rose have spread over the heaps, and covered them with a close netting of tiny leaves, and the whole surface looks from a



distance like a grey-green quilted coverlet. Beneath and around the clumps of thorn and elder, rabbits burrow in thousands, and from these centres they spread, feeding outwards in regular circles, over the whole area of the warren. The steady grazing of the rabbits has also changed the character of the vegetation. Wild honeysuckle grows freely on this downland, but the hungry rabbits gnaw the stems as soon as they begin to climb the gorse and thorn bushes. This constant nipping in the bud has acted upon the honeysuckle much as the daily pinching of young trees by Chinese gardeners does on the trees in the dwarfed gardens of Peking. The honeysuckle has become a minute creeping plant, covering the ground in level patches like the wild thyme and rock-rose. Some herbaceous plants suffer less from the rabbit's appetite than the hardwood shrubs and bushes. Great masses of pink flowering willow herb stand in the warren. The plants look both green and succulent, but for some reason the rabbits refuse to touch them. The warren, populous as it is, forms only the outer fringe of the sanctuary. It plays the part of the native town in an Indian cantonment to the more precious inner circle in which the pheasants are reared and fed. More than a thousand of these birds, ranging in size from that of a half-grown chicken to that of the adult pheasant, though at present all clothed in the sober brown plum-

age of the immature bird, gather in this inclosure as feeding-time approaches, and though dispersed during the day among the scattered clumps of thorns and firs, seldom wander at any time much beyond the limits of the outer rabbit-proof fence.

It has become the fashion to laugh at the modern practice of pheasant breeding. But though there is little that is remarkable in the sight of scores of coops, each containing a hen and a dozen or more pheasant chicks, in the spring and early summer, by mid-August the scene has changed. The coops have disappeared, and the congregation of such a multitude of artificially reared wild birds, attached voluntarily to a single spot, surrounded by the open and little-inhabited downs, and enrolled for the time being in the ranks of domesticated creatures, is a sight of no common interest to the naturalist. Their numbers are such that they are visible from a considerable distance, and when viewed from one of the adjacent slopes the rounded backs of the columns and companies of pheasants wandering round the inclosure, or travelling in long lines and in single file along the rabbit paths, resemble the huge flocks of guinea-fowl which 'trek' at sundown across the veldt to drink at some South African stream. As the afternoon advances the birds may be seen moving from every side towards the keeper's hut, where the stores of meal and water stand ready for mixing. The

larger birds which have strayed beyond the inclosures take a short flight over the fences, the other troops unite and advance, and before long the whole surface of the warren near the huts is covered by the crowd of pheasants, like a Zulu impi, in crescent formation with converging horns, moving towards the centre of their artificial food supply. When the day's rations are given out it is no part of the keeper's plan to deliver it in one spot. The man and his assistant walk off rapidly in opposite directions, casting the food right and left. The birds divide, following the feeders in a hurrying mass, which gradually lengthens out into a long line of feeding pheasants, stretching for several hundred yards across the warren. At this time they are often joined by full-grown wild pheasants from the adjacent copses. These meet with a very cold welcome from the young birds. Though quite indifferent to the presence of human beings, the intruding pheasants wear an apologetic air when eating the bread of servitude among the tame birds, and submit to pecks and bullying with the utmost meekness.

The massing of such numbers of defenceless and appetising food animals as pheasants and rabbits in a very limited area, and within the short space of a single breeding season, exercises the same attraction on their natural enemies as a vole plague or a locust swarm does in the ordinary course of nature. Half-grown pheasants

are dainty food, and helpless creatures, even when wild bred. The tame birds are even more defenceless, and the good news of the feast which may be had at the cost of a little enterprise is circulated by some mysterious agency amongst all the robber tribes of the downs. In August the young of the three natural enemies of game common to the district—the sparrow-hawk, the fox, and the stoat—are full grown, and having good appetites and little of the acquired caution of their elders, attack the birds with an *acharnement* which nothing but the strongest measures can foil. Respect for the hunt saves the lives of the foxes and cubs, though the constant watching by men and dogs, repairing of the wire fence, and arrangement of 'scarecrows,' which daunt even a hungry cub, cost much time and toil. On the other hand, the fox is in one sense less dangerous than the hawk or stoat. He prefers quantity to quality, and though surrounded by pheasants, usually selects one of the old barndoor hens which have reared the broods. The sparrow-hawks can neither be scared, nor are they satisfied with anything less dainty than a half-grown pheasant. They migrate from the adjacent downs with the whole of their brood, often five or six in number, and gliding into the inclosure at daybreak, pick up from the ground the first poult they see. This goes on until the last of the brood is shot, not unfrequently in the act of picking up a bird within a few yards of the

temporary watch-house. The boldness of the sparrow-hawks in the air is matched by that of the stoats upon the ground. As the corn is cut they migrate to the warren and pheasantry, and will chase a rabbit almost to the keeper's feet, or attack the pheasants as they are feeding on meal just scattered by the hand.

Kestrels, owls and hobbies are harmless to the birds in August, but the keepers urge a new objection to the owls and also to the nightjar. It has its origin entirely in the new conditions of extensive pheasant breeding, and not in any vice inherent in the other birds. The regiments of young pheasants roost crowded thickly together in the trees. Being deprived of their natural parents, they are nervous at night and liable to panics. The nocturnal flight and calls of the owls and nightjars often frighten a number of young pheasants, and cause them to fly down from their trees. The others hear the rush and clatter of wings, and the panic spreads. Hundreds of the stupid birds are flying wildly in the dark, and next morning many are picked up dead or injured. Some break their necks by flying into the wire netting, others smash their wings against branches of trees, and if the night be wet and cold, the backward birds often die in the damp grass in which they have roosted, being unable to fly into the trees in the darkness of the woods.

## ‘PROGRESSIVE’ SPARROWS

THE London sparrow is a progressive bird. He changes with the times ; and though a good deal has been written about him, the following remarks are offered as part of the ‘kinematographic’ record of its history which its rapid ‘adaptations’ and open mind demand.

Great numbers of the London sparrows are now deserting the streets and houses for the ever-increasing area of public gardens, parks and squares. There they nest by preference in trees, using any materials which come to hand. The nests are usually built in a hurry, and freshly mown grass the nearest, and therefore the most common framework of the sparrow nursery. In the main thoroughfares their nests are scarcely more numerous than those of other birds in a Surrey lane, though, as the vociferous birds are never quiet, the position of each nest is easily noted. In his old haunts among the bricks and mortar, the London sparrow is far more particular in the choice of a site for his nest

than might be thought. Conscious of the ever-present danger from cats, he seeks a hollow in a perpendicular wall face. It does not matter whether this is among the limbs of a statue in a niche, or the pediment of a Palladian window, but any proximity to the line of roof, cat-haunted, and therefore dangerous, is avoided. Unlike the rats, the London sparrows do not desert a falling house. Those which are advertised for sale and demolition, and are consequently covered with large frames for bill-posting, are in great request with them. The spaces between the bill frames and the walls to which they are bolted are safe and commodious nesting-grounds, and the iron spikes, pegs of wood and ledges of the frames make capital perches. Some houses adjoining those demolished to make a way to the Hotel Cecil, and decorated with advertisements, are blessed with a few sparrow families living between the advertisement boards and the wall, and getting the greater part of their living from the oats dropped from the nosebags of the horses on the cabstand near the hotel. Others have nested behind the carving over the windows in Attenborough's shop. But in the case of rows of houses they seem to avoid the gutters, which are their pet nesting-place on detached residences. The probable reason is that in terraces cats traverse the whole of the roof and gutter-line, and can claw out any broods within reach of their nightly

prowl. One example of the 'progressive' character of the London sparrow is his acceptance and delight in that most hideous of all modern building material—corrugated iron roofing. If a shed or out-building of sufficient height roofed with this is erected near their old quarters, the sparrows will desert them to a bird, and nest under the crumpled passages of the iron. The 'eaves' of this kind of roof are never filled in, and it presents hundreds of ready-made tunnels leading under the cross beams. No cat can climb under it, or stretch a claw far enough up to hook out the nest. The whole community will sit on it and chirp its praises the first hot morning after it has been put up. It has 'come as a boon and a blessing' to London sparrows, and if the question were put to the vote whether they would rather dispense with corrugated iron or with trees, the iron might possibly carry the day.

It is in keeping with the democratic, commonplace, ordinary, unreflective mind of the London sparrow that he is intensely local. In London itself he moves as seldom as he can from his own particular block of houses or square or terrace; and in the suburbs he keeps not only to his own house, but often to the back or front of the house only, not caring to circumnavigate his own suburban garden. In spring, when pulling crocus flowers to pieces becomes a mania with



sparrows for a few days, it has been noticed that in many instances all the sparrows in the front of the house will take a fit of crocus-spoiling, while the flowers behind the house are let alone. Or the reverse may be the case, all those behind the house being spoilt, while the sparrows haunting the front of the house and front garden are occupied in some other sphere of activity. If an old nesting-place is destroyed, the local birds at once seek another as close as possible to it. Recently some offices were pulled down at a large shipbuilding yard in London. At the same time a ship was being built under a long shed close by. The evicted sparrows at once began to build in the roof of the shed, making a row of nests within a few feet of the deck of the new vessel, on which workmen were passing to and fro from six o'clock till sunset, and a continuous din of hammering rivets went on all day. The nests were all fixed between the double longitudinal beams which supported the iron roof, and as the only rest for the bottom of the nest was on the sloping struts which left the main pillars to join the beam, the birds filled in the whole of the acute angle with grass, and raised the nest on this. The old-fashioned nesting-place of the London sparrow was ivy on high houses, preferably that which was seldom cut. From five to twenty nests were often found in old-fashioned terraces in

the ivy of a single house, and though the crocuses suffered, the sparrows were invaluable aids to the London gardener in days when roses and pot flowers, and even peas and lettuces, were commonly grown in the narrow strips of ground behind the terraces of Bayswater or Brompton. Even their flower-pulling often has more method than might be supposed. Of two cherry trees in a certain garden one is always attacked by sparrows when in blossom, and the bloom scattered. The other is not touched. This is a sound tree, and bears a good crop. The other tree is in bad condition, and affected with blight and canker, and it is quite probable that the sparrows are only destroying diseased blossoms. In the New Forest the bullfinches visited two adjacent gardens. In one they apparently picked off every bud from the gooseberry trees. In the other they were shot, and the buds saved. In this garden there are almost no gooseberries. In the other, where the buds were apparently destroyed, there is an abundant crop. For 'bullfinch' read 'sparrow,' and the lesson may be the same.

If left to himself, the London sparrow would probably multiply exceedingly, for there is enough waste from every human household to keep at least one pair of sparrows. That would give something like one and a half million sparrows to the area of greater London. But these figures do not represent

actual facts. The sparrow population is rigorously kept down, not by want of fecundity, for at the Zoo, for instance, where food and shelter abound, the birds seem to breed at all seasons of the year, but by the operations of the natural enemy, that great fact in all wild life, which even the progressive London sparrow cannot avoid. The natural enemy in this case is the London cat. If anyone will count up the number of houses in his or her knowledge which do *not* possess a cat, the numbers and ubiquity of the natural enemy will become apparent. Poor people keep more cats than rich people, so the small houses abound in cats. Rich people's cats, which have large houses as a rule, only catch the sparrows on their own estate; but poor cats have to poach at large, and their ravages among the young sparrows are prodigious. It has been observed that a sparrow-killing cat bags, on the average, two young birds a day. No amount of correction seems to prevent their indulgence in this form of sport. They know it is wrong, but it is too fascinating. One young cat of the writer's acquaintance went into a fit after a mild beating for killing young sparrows, and as soon as he recovered went off to catch another. A cat in the same house which was surprised with two naked nestlings in its mouth slipped them underneath a mat on the stairs when it saw its mistress approaching. Nature is too strong for them, and the drawing-room

pussy seems no more able to resist the taste for sport than the stable cat.

Usually it is only the young broods which are killed by the cats ; but on cold, wet days old birds are sometimes caught. Against all other enemies but the cat the London sparrows hold their own, though a fox terrier occasionally catches an unwary bird. Their faculty of self-preservation is only comparable to that of the London street arab. The London wood-pigeons, which are only beginners in urban life, are occasionally run over or trodden on by horses in the Row. No one ever heard of a sparrow thus meeting his end. They know to an inch the limit of safety, whether feeding on a railway line, among the street traffic, or in the gardens of a London square. Intensely self-regarding and self-satisfied, they are also intensely democratic. Seclusion, repose, privacy, reserve, all these are odious to the London sparrow. He does not appreciate them himself, and, like the human plebeian, resents any departure from his standard in others. No more retiring bird has a chance among the sparrows. They bully and hustle even the black-birds, and if a canary gets loose among them he is at once mobbed, presumably because his feathers are brighter than the sparrows. They talk or eat from dawn till dusk, quarrel loudly and in public, live anyhow and anywhere, but always in comfort, have no

standard of elegance, like the birds whose nests are always beautiful, but somehow they get on where other birds do not, and achieve success, but of a coarse material kind which even a naturalist finds it difficult to admire.

## AERIAL STEEPLEJACKS

COMMENTING on the ascent of the Nelson Column by steeplejacks in order to fix the decorations for Trafalgar Day, an evening paper stated that a pair of peregrine falcons once nested on the summit. This story needs corroboration, as the fact would have been at once noted by naturalists in London. But it is true that a pair of kestrels did make a home on the Column for a season, and nested in the coil of rope carved at the back of the figure of Lord Nelson. This seems an odd place for a bird to choose as a home; but experience shows that such is not the case. There is above all great cities an aerial plane, far remote from the human life below, broken at intervals by the sky-piercing summits of cathedrals, columns, monuments and towers, a real 'nephelococcygia,' which is only haunted by one species of man, the steeplejack, but is the chosen and peculiar home of several species of the larger birds. The birds' contempt for the creatures

who build stone spires four hundred feet high, which they cannot even climb, would probably be great indeed if they only realised the facts. As it is, they probably look upon the tall structures as built especially for their use, or when ancient, as natural features in the landscape, on which they can find complete isolation and security. Towers and spires also appeal to another side of the bird mind. Some species, though not all, are never satisfied unless they occupy the absolutely highest point in the neighbourhood. Thus, while the jackdaw will sit on any part, from the buttresses to the vane of the cathedral, the stork, the gull, the cormorant or the falcon always seem uneasy unless perched upon the summit of the building or crag which they choose for a resting-place. From an interesting letter on the peregrine falcons on Salisbury spire, recently communicated to the *Field* by the Rev. A. Morres, for thirty-five years a resident in the Close at Salisbury, and the author of an excellent pamphlet on the *Birds of the Faroë Islands*, it appears that Salisbury spire has for years attracted the peregrines from the meadows of the Avon and from Salisbury Plain, and also the falcons 'on passage.' 'The first year in which I noticed them,' writes Mr Morres, 'was in 1866. The restoration of the spire was going on at the

time, and I saw four peregrines together, one of which settled on the top of the weathercock (four hundred feet high), and I picked up a snipe's leg and other *débris* of their prey left by them in the gutters. Ever since that date no year has passed without peregrines being seen soaring round the spire, and in the autumn months apparently roosting there. Their numbers are generally increased at this time of the year, doubtless by migratory birds, and a pair very often stay on in the spring, and would undoubtedly nest on the tower if due accommodation (which I hope one day to obtain leave to make) were prepared for them.'

Their favourite haunt on the cathedral is the parapet of the tower, from inside which the spire springs, and though they do not nest there, the hen falcons constantly 'drop' their eggs on the platform; a pair of these were picked up by one of the canons, and are now in the local museum. The falcons seem to feel that this aerial territory is so much their own, that they approach quite closely on the rare occasions on which anyone is permitted to ascend to the doors of the spire. One perched on the first band of fretwork round the spire, about forty feet above Mr Morres's head, and another allowed itself to be shot by a workman, who carried a gun up on to the scaffolding.



On crags and cliffs along the coast sea fowl always occupy the highest points. On the Needles, or the 'Horse Rock' off Culver Cliffs, if there be only a single bird on the crag, it will in nine cases out of ten be perched on the highest jut of chalk. But it is not generally known that cormorants, when driven inland, make a home on the tops of church spires. Newark-on-Trent possesses an unusually fine and beautiful parish church, with a spire like a minor Salisbury. On the evening of September 23d, 1893, a great black bird was seen to fly in from the meadows by the Trent, and with a steady flapping flight to rise on a gradual slant to the summit of the spire, where it alighted on the arrow of the weathercock. It was seen seated there early on the following morning, and was recognised as a cormorant. Unlike the author of *Paradise Lost*, the vicar and people of Newark saw nothing of ill-omen in this visit, and regardless of the classic line showing how Satan flew into Eden and 'sat like a cormorant on the tree of life,' they welcomed the coming of the bird, and quoted the death of the albatross in *The Ancient Mariner* in its defence, in their parish magazine. For seven weeks and five days the cormorant returned at dusk to its perch upon the arrow, where

every night it had the satisfaction of knowing that it sat higher than any living creature in the valley of the Trent. It departed, as it came, after a great gale, which blew on November 18th, and though it was reported to have been shot on the river, there is reason to think that the storms, which had driven it inland, may also have carried it back to the ocean shore. This visit of the cormorant to the summits of lofty inland spires is not unprecedented. Two birds of the same kind had roosted on Newark spire some years before for a single night, and they have also been seen on Salisbury Cathedral. Storks, which show their delight in the upper regions of the air by their habit of soaring for hours at vast altitudes, are also noted for their determination to occupy the highest possible point when at rest. As several species of stork prefer to live in the society of man, and frequent great cities, this tendency may be observed without difficulty. In India the adjutant-storks always prefer to stand on the topmost pinnacles of high buildings. In one town it was noticed that an adjutant always sat on the top of the pediment of a native college. An Englishman, who was engaged in examining another part of the roof, noticed that a single brick had been laid on the parapet of the pediment, and that the adjutant, anxious to gain a couple of inches in altitude, was standing on this brick—poised,

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according to custom, on one leg. A crow slipped up behind and pulled the stork's tail, upsetting it twice from its post. As it approached to do this a third time, the adjutant caught sight of it, darted down its enormous beak, caught the crow, and swallowed him whole, after which, with a *noli me tangere* air, it reoccupied its brick pedestal. In villages, where the stork nest on the gables of the barns, or in cities, where no tower is too high for them, the common white storks have the same fancy. At Antwerp the highest points, higher even than the old many-storied church towers, are the two huge towers of the new Reich's Museum. Their pictures, painted by their own great artists, are the national possessions most prized by the Dutch, and this splendid new palace forms a worthy home for them. The towers are capped by steep roofs, on each end of the ridges of which is an elaborate finial of gilded iron-work. In one of these a stork has built its nest; and so lofty is the tower, and so high the walls of the building, that even those employed about the building were incredulous that the luck-bringing 'oyer-Vogels' had made a domicile upon their new State museum. One notable exception to this habit of the storks is, or was, seen at Strasburg, where they nested, not on the completed towers of the cathedral, but on that which is unfinished and only rises level with the west front. On the other hand, in the ruins of Persepolis, the

storks have sought the capitals of the pillars in the Hall of Forty Columns, and nearly every pillar holds a nest on the summit, which once supported the cedar roof beams of the palace of good Darius, burnt as the climax of Alexander's feast. In Turkey, and in the East generally, the storks do not occupy the summits of the minarets, which take the place of church spires, because these are mainly capped with slopes of smooth cement, unsuitable sites for nests. Hence they build on the flat housetops, generally selecting those of the Turks, who protect them. For some reason their numbers have diminished greatly since the last war with Russia, and the Moslems look on this as an evil omen for the future of their race in Europe.

There are other tribes of tower-dwelling birds which are content with other parts of buildings than their summits, but look upon them as a place of security and convenience. Pigeons prefer them to any other nesting-place. In Upper Egypt huge clay-brick towers are built for their convenience, set with hundreds of clay pots, built into the walls for nesting-holes. At Rochester the pigeons have appropriated the whole interior of the Norman keep, and rear their young there, even as late as December, in numbers beyond belief. The whole interior resounds in spring with the multiplied cooing of the doves. Kestrels and owls always love the 'ivy-mantled towers,' and some-

times nest in the same village church. More often they seek a ruined church or fortress, and lay their eggs in the crumbling mould among the ivy roots. One of the most beautiful sites of a kestrel's nest which the writer has seen was in Conisboro' Castle, on the ruined wall of the hall of Athelstane. So, too, in the Castle of Falaise, the jackdaws have multiplied until the ridges of the walls are black with the chattering flocks ; and in some of our English country churches the accumulations of sticks and rubbish made by them in nesting-time have drawn an edict from the bishops that their visits shall be stopped by wiring the openings of the louvre boards. But the jackdaws are irrepressible. They drop the sticks outside, littering the bases of the towers with dead wood, and carry in smaller and more objectionable rubbish to cushion their young among the belfry timbers.

## BIRDS THAT PASS IN THE NIGHT

DURING the wet September of 1896 much attention was drawn to the enormous gatherings of swallows in the lower Thames valley and on other rivers. Their number was unprecedented, and it was obvious that some climatic or other cause was arresting the normal stream of the autumn migration. Early in the same autumn the results of eight years' observation of the migration of birds into and out of this country were issued by the Council of the British Association. The facts which it chronicles are full of interest, and though the author of the report refrains from stating any views as to the causes of migration, or the intelligent forces which guide or suggest the journeys of the birds, a clue has been found to account for the knowledge apparently possessed by birds, that on a given day, in distant and frozen regions, the earth will be open and accessible.

The object of the inquiry which has been going

on round our coasts for eight years was simply to find out what birds come to and go from this country across the sea, and when they do so. The means to do this were almost perfect. The millions of pounds which commerce has spent to surround the coast with lighthouses and lightships were simply 'converted' for these years to the use of the naturalists. The Elder Brethren of the Trinity House, the Commissioners of Northern Lights, and others fell in with the idea. The lighthouse keepers were delighted to vary the monotony of their lives by watching the birds, and took to the work of 'filling in reports' with the curious liking which all fairly educated working men, such as railway guards, porters and policemen, now evince at the chance of 'filling in returns.' Though all the men were volunteers, the reports were 'surprisingly accurate—it is wonderful how the observations at one station were borne out by those taken at others.' From this ready-made girdle of watch-towers, with guards whose duty kept them vigilant at night, from year's end to year's end, for a period only shorter by twelve months than that for which Clytemnestra's sentinel sat waiting to light the beacon telling of the fall of Troy, the records have been sent of the coming and going of the birds. And the record is perfect and unbroken. It is synoptic.



**BIRDS THAT PASS IN THE NIGHT. *By C. WHYMPER.***





The returns showed what birds were coming and what going, from every part of our coasts, at the same day, hour and minute.

If our islands lay under the trade winds, where the weather is constant, or in a different part of Europe, the results of this complete means of observation would probably be simple and conclusive. But as England so lies in the ocean as to be both a stopping-place and a 'crossing-place' for birds passing to and from Scandinavia to South Europe and Africa, and to and from the Continent to Ireland and Spain, our 'migration' is as muddled as our weather, which, instead of being constant, is always being upset by cyclones from the Atlantic. On the other hand, the number of the returns, and the industry of Mr Eagle Clarke, who has compiled the report, afford material for discovering the main facts even of those complex bird movements. We give some of these shortly, not that they are specially interesting in themselves, but because they stand in relation to conditions of weather and temperature, which, when placed together, and in their relation to the birds' journeys, appear very much in the light of a discovery. In September and October, when the English nesting-birds, such as the swallows, are gathering together and flying south, the birds of Norway, Sweden and Iceland are

pouring in on the East Coast. The close chain of lighthouses on this coast shows that these northern birds do not hit our shores lower than Cromer. They drop in from Shetland to the end of the northern jut of Norfolk, but not farther south. On the other hand, another stream comes from Denmark, North Germany and Holland into the mouth of the Thames—Essex and Kent—and separating, passes right up the East Coast as far as the Tees, and down the Channel towards Cornwall. The greater number are starlings, larks, plovers and rooks. The rook thus appears thoroughly migratory, and the story of the flock which used to fly across the Channel once a week from a Sussex rookery does not appear so improbable as it did. The birds coming by this last route always arrive in the daytime, and in no case are the immense flights of birds observed passing to and from these islands which Dr Gatke and Mr Seebohm saw in Heligoland. There the streams seem concentrated. Here they are dispersed, and simultaneous observations taken show that there is little or no connection between the routes taken over England and that which crosses the great *carrefour* of migrating birds, the little island rock off the Elbe. Details of the arrival and departure of the various species will be found

in the report ; but the details of mass migration are apt to perplex counsel, while the details of the actual journey of any particular species, such as the swallows, and their journey from England to the Equator, are not yet made out, though Mr Eagle Clarke offers to do so in a further report. We pass on to what seems to us to be the most interesting result of the present set of observations. Outside and inside the ring of lighthouses the Committee had another body of information of the most important kind. They had the weather chart of the Meteorological Office. If anyone takes the *Times'* weather chart, and draws a red circle round the coasts of England, Ireland and Scotland, this will represent the ring of stations recording the arrival and departure of the birds. Outside this is a wide region, from the North Cape to the top of Corsica and the Pyrenees, over which our Meteorological Office daily notes the weather in its chart. Thus, when the grey crows and fieldfares are arriving at Sandringham, we know exactly what the weather was like in Norway when they started, and over the North Sea when they were flying. So we know what the wind, barometer and temperature were like in France when the flights of spring migrants reach the Start. In this double record we can compare both the daily weather of

North Europe and the daily movements of the birds in a central part of that area.

The result is most suggestive. Nearly the oldest scientific notice of migration is a note in the *Floral Calendar* of Theophrastus, that the birds come to Greece on the 'ornithian winds' between February 20th and March 12th. As it was the oldest, so it is the longest lived of beliefs about migration, that the birds wait for favouring winds. The weather chart shows that they do not. The direction of the wind is disregarded. 'It is no incentive to migration.' On the other hand, heavy gales stop migration entirely. The birds dare not move, and the ocean species, such as the petrels, are caught and driven inland in heavy gales. Ordinary steady winds they simply disregard. In other words, what the birds observe is not wind, but 'weather.' When the hurrying cyclones are crossing the Atlantic, or travelling round the Shetland Islands and on to the Norwegian coasts, the birds do not move. 'The stream of migration is dammed up at its source,' and when released the birds rush over in a torrent. The great congregations of swallows noted at the end of the first fortnight of September, not only on the Thames eyots, but on the Rhine, had been waiting till the cyclonic gales of the first fortnight of September (which wrecked houses in

Paris and Manchester) were over. Since then the migration was normal, and in smaller flocks. So in October, as soon as a period of still, 'anti-cyclonic' weather with cool temperature begins in Norway, the birds set out for England. They come here on an easterly wind, not because they started with it, but because the calm 'anti-cyclonic area' in Scandanavia has easterly breezes on its edge where it lies over the North Sea. If it is not wind which the birds wait for, we may ask what other weather conditions besides the absence of storms *is* an incentive to migration. The answer given by the chart is *temperature*. It is temperature which is the main controlling factor in all the great movements. Cold coming in the calm anti-cyclone sends them south. Warmth, and a rising thermometer, is the instant signal to go north. A fact noted by Mr Eagle Clarke shows the sensitiveness of birds to the rise of temperature, and the way in which, with their swift flight, they follow the warmth as a shadow follows smoke. On February 17th, 1887, wheatears and a ring-ousel were seen near the Chicken Rock Lighthouse and the Longship Station. This was strangely early for these birds to come, but a reference to the daily weather report showed that this portion of the British area was the *warmest spot in Western Europe on that particular day!*

It is easy to conceive that birds fly from the North before the cold. But the standing problem of migration is their almost instantaneous arrival inside the Arctic circle from the South when the frost first gives. Mr Seebohm noted that in the valley of the Petchora they came in twenty-four hours after the warmth began. The explanation seems to be that temperature may quickly rise over great areas. The birds at the furthest extremity instantly note the change, and in the course of a day's flight reach the northern fringe, where, as Mr Seebohm showed, a store of ice-preserved fruit, and of insects released from the egg at the first touch of warmth awaits them.

## FISH AND FOWL AT HAMPTON COURT

THE death of the great gold fish in the central fountain at Hampton Court was recently recorded. It had reached a weight of nearly four pounds, and was probably the largest, and perhaps the oldest, fish of its kind in the country. The gardens and precincts of the old palace are in no sense Dutch, though their improvement by William III. lends some colour to the idea. It was Versailles that the designers wished to imitate, both in the building and its surroundings, and though the whole is now a paradise for wild birds, the first efforts of the renovators of the palace must for a time have banished wild life from its vicinity. In the great flat of the Home Park, stretching for more than a mile to the south, the imitators of Versailles saw their opportunity for creating the long lines of convergent tree vistas and canals, leading, as it were, from all quarters of the earth to the foot of the monarch's throne, which was their notion of the magnificent surroundings proper



to a palace. They deliberately neglected the one natural feature of surpassing beauty, the River Thames, which flowed by the palace gates, and shut it off by walls and railings. Then, during more than one reign, they devoted themselves to the development of the formal paradise within.

From their point of view, the site had the advantage of that of Versailles. It was a natural plain, and the geometrical lines were not distorted, as at Versailles, by inequalities of ground. But the precincts of the ancient palace, and the park adjoining, contained something more directly useful to their purpose than any other natural advantage. By a strange chance, there rose almost opposite to to what is now the main entrance of Sir Christopher Wren's palace, abundant springs of pure water. That they should rise so close to the river is sufficiently remarkable, but their subsequent course was not less unexpected, for, instead of flowing directly into the Thames, their waters traversed the whole length of the Home Park parallel to the river, and only joined it opposite the town of Kingston. This forgotten spring feeds all the artificial waters of the palace, keeps them full, bright and sweet even in drought, and lends to the environment of park and gardens a lasting quality of freshness and refinement. In the semi-circular canal which skirts the formal garden

to the south, it bubbles up through the gravelly bottom where the curve is nearest to the river, and, after filling the upper levels, slides into the 'long canal' which stretches on to Kingston. The half-moon canal, which divides the 'pleasance' of the palace from the park is perhaps the most beautiful boundary of any formal garden in the country. Its inner margin is set with a triple line of lime trees. These, left to Nature, and untrimmed, have attained the utmost beauty and perfection of growth, though the form and structure of each has approximated to that of its neighbour, giving a look of almost conscious unity to the ranks of trees. To the branches and bosses of the limes, the birds have carried thousands of mistletoe seeds, which have taken root and grown in such abundance that the trees are covered with bunches of the plant, some limes carrying a score of mistletoes, sprouting from trunk and branches. They grow in almost equal abundance on the thorn trees in Bushey Park. Something in the soil or air of this gravelly, loamy flat, formed by some other agency than the floods, which made the level riverside meadows, from which it differs both in soil and in the fact that it contains springs of water, must favour the growth of this parasitic plant. It is as plentiful as in the woods of Picardy. An unintended effect of the design and planting of the main garden is that

the birds inhabit it in zones, corresponding exactly to the degree in which their species have established 'commensalism' with man, whether king or peasant. The walls of the palace itself are decorated with ornamental monograms designed by Grinling Gibbons, and wrought in stone, with much 'undercutting.' The interiors of these monograms are stuffed with sparrows' nests. Next to the walls, and extending to the arcs of lime trees and the water, are yews, set in order among statues and beds of brilliant flowers. These are the homes of hundreds of thrushes and blackbirds. In spring, two, or even three nests may be found in a single tree. The limes themselves are haunted by crowds of fly-catchers, redstarts, tits, and water-wagtails. The nuthatch, and even the lesser spotted woodpecker, also build there yearly. Beside, and upon the canals are the nests of water fowl, both tame and wild. The ornamental, semi-domestic water fowl nest on the park side of the canal. For their benefit exists the only distinctly Dutch contrivance surviving at Hampton Court. Small 'duck-houses,' either built of boards, or made each spring out of laurel boughs, are set along the margin for the ducks and geese to lay in. This is a very old Dutch custom to protect the eggs of the water fowl on the canals and lakes round the Dutch country houses from the magpies which abound in the woods. There are no magpies to steal them at Hampton Court,

but it has always been the custom to make 'duck-houses' each spring, and the tradition probably dates from the days of William III. At midsummer the greater number of the water fowl leave the garden canal, and, under the leadership of an old Chinese gander, march off into the 'long canal,' where they lead a half wild life until the winter. The swans, on the other hand, keep near to the gardens, except when they observe some unlucky fisherman busy with his roach rod. The fishing in the canal is free to the public since the opening of the Home Park, and the swans have discovered that 'ground bait,' lying on the bottom and nicely soaked, is food which suits them exactly. A favourite perch for anglers is on the end of a railing which projects into the water. Thence they cast their ground bait to the furthest length of the 'swim,' and, after a proper interval, begin to fish. At this moment the swans may be seen swimming up to share the sport. They know quite well that the fisherman cannot reach them, and that as long as he is perched on the rail he cannot pick up clods or stones to drive them off. Indifferent to his shouts and abuse, the swans sail majestically into the centre of the 'swim,' ascertain the exact lie of the ground bait, and then, dipping their necks leisurely, consume it within ten feet of the helpless provider of the feast. Roach are the main source of sport in the palace waters, but recently a twelve pound carp was caught with the rod and

line. This monster fish had been tempted with all the delicacies of the season — cherries, strawberries, and green peas, as well as the standard baits for carp—but in vain. Then, by a happy thought, the fisherman remembered that he had not yet offered the epicure fish a new potato! Selecting a small one, he boiled the vegetable, and it was appreciated. The carp sucked it down, and was hooked and landed. The outer zone of the Home Park is frequented by many of the rarer wild birds not commonly found in the neighbourhood of cities. At a distance of nearly a mile from the palace, in the avenue of tall elms which runs parallel with the right bank of the 'long canal,' was the heronry which the birds deserted some thirteen years ago to build in Richmond Park. The herons constantly revisit the canals to fish, but have never nested since they first left. The greater part of the Home Park is bare of cover, without bracken bushes or even scattered timber, except the remains of some five or six huge oaks, dating from before the days of Cardinal Wolsey. Yet at the present time numbers of partridges haunt the outskirts of the park, spending their day between the open grasses and the enclosed paddocks near Kingston. Nearly thirty brace were recently flushed in the course of an evening stroll by the southern boundary.

Besides its artificial canals, the park contains a natural

feature specially attractive to birds, and not less remarkable for the rarity and beauty of the flowers which surround it. The springs which rise in the beds of the canals do not exhaust the natural features round Wolsey's palace. In the park itself is a long oval pool fed by everlasting springs, partly rising in its bed, and partly trickling in from some slight elevation in the ground. The overflow of its waters have formed a long line of soak and marsh in the direction of the Thames, never stagnant, but never reaching the proportions of a stream except in heavy rains. The length of the parent pool is some seventy yards, and this is covered from end to end with a thick growth of the rare water villarsia. The golden flowers stand upright on stalks some three or four inches in length in groups like golden stars, their shape and colour reflected and inverted in the smooth surface of the pool. While every other portion of the park is burnt brown after the late heats, the long line of the marsh is as green as emerald, set with masses of forget-me-not and marsh plants, and haunted by flocks of rooks, jackdaws, starlings and finches, and by two or three pairs of sand-pipers, whose white breasts and whistling notes recall the stream-sides of Scotland. The spring from which the marsh descends rises to the south-west of the queen's oak ; its name appears not in legend, but the keepers have christened it the 'Cardinal's Well.'

## THE HERONRY AT VIRGINIA WATER

THE lake of Virginia Water is, in a sense, the result of the battle of Culloden. George, Duke of Cumberland, was, like the Duke of Cambridge, not only Commander-in-Chief but also Ranger of several royal parks and forests. These offices he filled in a very creditable manner. In the New Forest, of which he was appointed Ranger, he was the first to improve the breed of the forest ponies by bringing thoroughbred sires into the district, one of these being 'Marske,' the sire of 'Eclipse,' and as Ranger of Windsor Park he created Virginia Water. It is said that his object in so doing was to find occupation for the additional soldiers whom the King desired to keep with the colours even after the Rebellion of 1745 had been crushed. It is equally probable that their presence suggested such employment. In either case the result was a happy one, and highly creditable to the Duke's good taste. The main valley, then a swampy heath, with two narrow glens running

back into the hills, were covered with the shining level of the new lake, which thus became the largest of all the 'Surrey Ponds.' The designer was so careful to observe the character of the natural lakes of that county, which are for the most part pools collected in shallow reservoirs without either dam or waterfall, that though the temptation to make a cascade was not to be resisted, he *hid* it round a corner so as to be invisible except when sought, and the lake fills the valley without exhibiting any trace of its artificial origin. Even George IV.'s temples and tea-house make little difference in the wild appearance of the seven miles of its circumference, while the size and beauty of the timber, both native and foreign, which was then planted, show the wonderful fertility of the light Surrey soil. Some of the spruce firs tower to a height of ninety feet, rhododendrons grow as if native to the soil, and the Mediterranean pines have outgrown the prim formality which usually marks the imported conifer in England, and are twisted, broken and fantastic, as if they grew on a slope of the Apennines instead of the side of a Surrey hill. The saying that 'all good things go well together' is illustrated by the charm of this well-established foreign timber in its English environment, and the occasional glimpse of a pair



of roe deer which were long ago introduced into the woods, suggests a link with the forests of Scotland or of the demesne of Fontainebleau. By the end of the third week in April all the larger native birds are nesting in these woods, and the combination of timber, water, grassy glades and evergreens attracts them in numbers unequalled anywhere in the neighbourhood of London. It is very doubtful whether in any part of Windsor Forest itself so much of the life of our resident birds can be seen in the course of a few hours as on the margin of this beautiful lake. Woodpeckers, both of the green and lesser spotted species, wood-pigeons in flocks, jays, crows, pheasants, a few wild ducks, and lastly a colony of herons, are all nesting round its shores. When the foliage of the deciduous trees is only partly out, and the undergrowth of summer has yet to spring up, these birds are seen more easily and at closer quarters than at any other season. The ground between the tree trunks is clear of rank growth, the bracken is dead and beaten flat by winter rains and its young shoots not yet uncurled, the brambles are leafless, the woodruff not half a foot high, and the brown carpet of dead leaves only broken by the wild hyacinths and primrose tufts and green arum leaves. The cock pheasants stray fearlessly in this open ground, the reds and

browns of their spring plumage shining like a bunch of red wallflower blossom spangled with gold. The turf which fringes the eastern arm of the lake is set at intervals with groups and single trees of Oriental pines. In one of these a pair of green woodpeckers have drilled a hole, and, having completed their morning's work of wood boring, spend the sunny hours of the afternoon in searching for ants' nests in the turf, where the hot sun and April showers have tempted the emmets to open their galleries to the air. From the head of the eastern arm of the lake a long grass glade, set at intervals with ancient thorns, is haunted by another pair of the green woodpeckers, while the call of others is heard at intervals from all parts of the northern wood.

Next to the placid levels of the lake itself this background of high wood is the characteristic feature of Virginia Water. It clothes the southern face of the line of hill which begins at Egham, and forms all the high ground of Windsor Forest. Steep, sheltered from the north and east, and formed of that mixture of light loam and peat which seems to suit every tree alike in the Surrey woodlands, from oaks to rhododendrons, it exhibits every various shade of leaf and foliage, from the tall spruces on the summit of the hill down to the alders, now covered with black tassels and blacker buds, which

dip into the lake. Half-way up the slope, and parallel with the water, runs a natural avenue between groves of beech. Every inch of its floor is set with emerald moss, embroidered with fallen beech-nut husks and the red envelopes of the young leaves that have opened. The whole hillside is a natural nursery of young trees. Under the sycamores hundreds of seedlings a foot high are spreading their leaves to the 'yonge sonne' of April, tiny rhododendrons spring unbidden by the side of the peaty ditches in the hollows, and young alders shooting up by the drain-sides have choked the streams, with richly odorous tangles of horned-moss, dead leaves, and the delicate *débris* of the minor vegetation of the wood. On the highest point of the hill-line, facing the columns of the Greek temple which George IV. constructed from fragments brought from Corinth and Cyrene, is the heronry. The trees in which the birds build are grouped around the head of a coombe leading to the lake. The tiny valley, not seventy yards in length from its rise in the hillside to where it loses itself in the lake, is an example in miniature of the natural formation common to the woodland coombes of Surrey. At the bottom, where the stream soaks into it, lies its tiny alder copse. Above lie groups of wild cherry, now white with blossom, and of

seedling pines. At the head of the glen, in a grassy semi-circle which seems the natural theatre for a sylvan play, are three or four feathery birches tossing their branches like cascades of green drops from crown to foot, while round the upper rim of the hollow are ranged the tall columns of spruces, larches, and pines in which the herons build, and from whose summits they can survey the vast extent of lower country lying to the south, and the lake from end to end, for the grove stands on the promontory which divides the northern from the eastern arm of the mere. Chance enabled us to measure the height of these trees. A single spruce had been uprooted by a storm, and lay prostrate, with the remains of an old heron's nest among its branches. It was seventy-four feet in length, and, judging by its girth, was not the tallest in the grove. One of these trees, partly decayed, was perforated at a height of thirty feet by a series of holes like the stops in a flute, the successive nesting-places hollowed out in different years by a pair of lesser spotted woodpeckers, whose drumming note was heard in the wood close by. The herons, though some of their young were hatched, were extremely shy, slipping noiselessly from nest after nest, and disappearing in the wood. Only five returned to circle above the

trees, and these were attracted mainly by the incessant 'clattering' of a brood of forward young birds in an isolated nest on the hill. Young storks, as well as young herons, use this curious alarm note, which might perhaps be of service to frighten a cat which climbed to the stork's nest on a Dutch house, but is much more likely to cause danger by attracting the notice of visitors to herons in an English wood. The silence and speed with which the old birds, in spite of their size, vanished from off their nests and behind the screen of spruce tops was remarkable. In this close cover they slipped away without the rustle of a feather or disturbing a single leaf by the stroke of their five-foot wings. The nests, of which we discovered eleven, were all in the loftiest trees, but though spruce firs were the favourites, others were placed in larches, and some in Scotch firs. Large heronries seem unusual in Surrey and the southern counties. At Wanstead Park, in Epping Forest, the heronry now holds fifty nests, and recently contained sixty-eight. But in Surrey and Kent from ten to fifteen nests seems the usual average. The colony at Chilham Park, near Canterbury, probably exceeds this number, but at Richmond Park, Virginia Water, Vinney Ridge in the New Forest, Stag Wood in Wolmer Forest, the numbers have not increased in proportion to the time during which the colonies have been established.

## YOUNG WILD BIRDS

BIRDS are so interesting to the outdoor naturalist in the spring, when they are singing, pairing, and building their nests, and again in autumn when on their migration, that in the midsummer months they are often less carefully observed. In July most of the broods of the year are hatched and fledged, and the young of the species which nest in the British Islands are learning to get their own living among the immense supplies of food which the summer season brings. The habits of young wild birds at this season of education and growth are not less interesting than when they are mature. But the thickness of the foliage on the trees, the high vegetation of the cultivated land, and the natural tendency of young birds to keep quiet and still, make the study of them a matter of some difficulty. In the hedgerows and by the woodsides, unfamiliar notes and calls of birds are constantly heard—the notes of young birds, which cannot be identified

owing to the thickness of the foliage, and though in the large woods the cry of the young sparrow-hawks and the flight of the pigeons and woodpeckers betray their presence, it is almost impossible to watch them, or to ascertain their way of procuring food. Probably most of the larger species are fed by the old birds long after they leave the nest. Of game birds, young partridges are the most self-reliant, and young pheasants the least able to take care of themselves. I have never found a brood of young quails; but as those coveys which are hatched in England often number as many birds as the quail usually lays eggs, it may be presumed that these, the smallest of all the game birds, are not less active and precocious than the young of the partridge. The latter are almost as active upon land as young wild ducks are upon the water. They run swiftly and without hesitation, even among thick vegetation, when they are no bigger than a wren, and follow or precede their mother through mowing grass, hedgerows, or the sides of furzebreaks and copses, seeking and catching insects all the while, and neither losing themselves nor betraying their whereabouts by unnecessary noise or excursions. Young pheasants, on the other hand, are constantly getting separated from the brood and lost, when they put up their heads and squeak dolefully, attracting the attention

of enemies, furred or feathered, to their helpless condition. If chased, a small pheasant pokes its head under cover, and waits to be caught. Under similar circumstances the young chicks of another ground-feeding bird, the peewit, would 'squat' the moment an enemy appeared in sight, and remain as still as a stone until he was gone. This suggests the very interesting question why a young partridge or pheasant 'in the down'—that is, before it has grown any true feathers—does not 'squat,' though that is the favourite means for concealment used by these birds when grown up, while the young peewit, which when grown up never uses this manœuvre, always has recourse to it. In the adult partridge, and even more in the adult pheasant, 'squatting' seems as instinctive as in the tiny plover. They seem to sink to the ground almost automatically when they feel alarm, and their trust in the protection of immobility and assimilation of outline to the contour of the ground is almost limitless. The writer has seen a hen pheasant crouched under a single mangold root, and waiting there until a setter's nose touched its feathers, and he has caught partridges with the hand that have 'squatted' in the snow until they sank beneath the surface. Every sportsman will recall striking instances of the very strong and, as it would appear, *innate* impulse of both species of bird



a short distance with their feet on the water, and the whole of their body out of it. In catching insects on the water they rival the dexterity of a young partridge on an ant hill. There is very little doubt also that, like young fish, they live largely on the microscopic *entomostraca*, which come as a kind of manna in the wilderness to all aquatic creatures. Mr St John once found a whole brood imprisoned in a water hole in the heather. The sides were steep, and it was evident that they had fallen in and had been unable to get out. There were signs that they had been there for some time, but they were all in good condition, and it was surmised that they had lived on insects which had fallen into the water from the surrounding heather. Probably they had largely supplemented this by devouring the water fleas and other *entomostraca* bred in the pool itself. Young coots, water-hens, water-rails, grebes and swans are almost as clever as the young wild ducks when in their downy youth. Later, when nearly fledged, and even when able to fly, they are much less adroit. They lose their cleverness together with the beauty of babyhood, and pass through a stupid half-fledged period as 'flappers.' Even their nerves go amiss. In parts of Iceland the line of flight of the young swans is marked by the natives, who assemble, and when the flocks pass over, yell, shout

and scream at the birds. The young swans become perfectly muddled, and many of them simply close their wings, leave off flying, and drop to the ground, when they are caught.

The broods of swallows and fly-catchers remain in evidence on our roofs and in the gardens until they leave the country. The former are attentively fed by the old birds long after they can fly, though the young fly-catchers soon become as expert in the chase as their parents. Young redstarts in places such as Epping Forest, where the species is numerous, nesting in the thousands of pollard hornbeams in the groves, also remain near the nest, and the broods of water-wagtails haunt the lawns.<sup>1</sup> But what becomes of the young of all the migratory warblers, the chiff-chaff, black-caps, willow-warblers, wood-warblers, garden-warblers, white-throats, and their relations which nest in every meadow and copse, and round every country house? The population of this class of bird must be multiplied by five or six—in the case of those having two broods, by ten—and yet after the nesting season there is no apparent increase in their numbers, as in those of the sparrows, robins; or tits. They are not even seen together, like the young wrens earlier in the season, but disperse and

<sup>1</sup> They also flock very early. I counted fifty-two on a dead willow in front of my house, by the Thames, on 3d July. They stayed for some days by Chiswick Eytot.

disappear long before they migrate. A few remain in the fruit gardens eating late currants. But the great body of the young of these insect-eating birds go to the fields of standing corn and barley, and remain there, feeding on the myriads of insects which the jungle of straw harbours, until the grain is cut. The species which stays latest in the corn is the sedge-warbler. The young birds are found by shooters in all the patches of late barley until the middle of September.

The demeanour of the young of wild birds in the presence of man varies greatly. Some are confident, others always mistrustful and shy. Generally speaking, they exhibit less caution than the old birds, though the fact that they do so is not clear evidence that they only learn caution by experience. Acquired habits or tendencies are so far hereditary in man that they are more often developed after than during childhood, and there is no reason why this should not be true of birds. These, however, do exhibit one striking instance of an acquired habit being hereditary even in the very young bird. Young robins inherit the confidence which their parents have in man, and though they, sooner than any other species, become independent of, and even hostile to, their parents, they show the same tendency to friendliness at a very early period.

## THE WHITE HORSE DOWNS

THOSE who have once more turned to the opening chapters of *Tom Brown's Schooldays*, will not lose an occasion of visiting the author's home at Uffington, and complying with his genial advice to visit the White Horse Hill. From whatever side this commanding down is approached, the sense of leaving the world of to-day, and entering another belonging to a different race of men, increases, and even possesses the imagination. Even in the brief interval which has elapsed since Thomas Hughes spent his boyhood in the village below, the retreat of the men of to-day from the high downs is almost complete, and scarcely a sign of man's handiwork in our time competes with the ineffaceable memorials of the ancient worshippers of the great White Horse. Stonehenge itself is not more solitary than the fortress and the idol left on the high places of the hill, or the sacred road leading onwards and upwards along the spine of the downs to the precinct of the god, and the gate of the city of

refuge to which in time of war and trouble the tribes flocked from the fields and pastures of the vale.

The Ridgeway, banked and floored with its silent pavement of turf, is the ancient and natural approach to the summit of White Horse Hill. From above the Blowing Stone it runs with straight and gradual ascent to the gates of Uffington Castle, banked and bordered with its ancient grasses, beside which the broad acres of modern pasture and sanfoin, on the land which has relapsed from cultivation, look like the weeds of yesterday. The ancient road, along which the war chariots rolled to the gathering-place of the tribes, and the legionaries tramped to meet them on the thousand acres of level turf which lay south of the Castle gate, is untrodden even by the cattle. These were formerly driven up from the towns and villages, from Swindon westwards to the hills of Bath, and fed their way at leisure to Reading and London, before the Great Western Railway cut the vale. Even the corn waggons, which used to set out at midnight from the vale to the markets of Newbury and Hungerford, with bells and lanterns, across the downs, have deserted the ancient track, and only the sheep and shepherds use it in the early morning hours, on their road to the gathering of the flocks at Ilsley Fair. Thus the Ridgeway has gone back to its ancient state, uncut by wheels and ungrazed by cattle, and if

anyone will ascend the Blowing Stone Hill in one of the rough carts of the country, he may gallop the three miles to the back of the White Horse, and enjoy the sensations of a British chief driving his springless car to the fortress of his tribe.

To this day no Berkshire man or woman of the vale or of the downs beyond can refuse the chance of a visit to the White Horse. It is a yearly pilgrimage with most, and deemed lucky by all. Poor and rich alike yield to the exhilaration of a visit to its summit, and linger in delight in the coombes and valleys at its foot. The ever-blowing wind upon the downs comes fresh across millions of acres of English soil, redolent, not of the sea, but of the scents and odours of the inland country. The kestrels and crows, meeting the blast, skim low, almost touching the tall grasses, the horses neigh and paw the ground, the lambs scamper from the shelter of the lambing-pens, where the ewes with their shepherd lie basking, back to wind and face to sun, and even the hares on the rolling shoulders of the hill are bigger, redder, and bolder than on any other region in the down country.

Who first built the fortress on the hill will probably remain a mystery for ever. It is one of a chain of such camps, not always built with such unique advantages of site as that on the White Horse Hill, but placed with rare military art to command the

natural roads leading from the inner country of the downs to the vale, as well as to intercept the main line of advance along the 'Ridge.' White Horse Camp, though the most striking, is not even the largest within the area of the Berkshire Downs. It contains fourteen acres of land. Letcombe Castle, which flanks the Ridge seven miles to the east, holds twenty acres, and a thousand years of cultivation, inside and outside the camp, have scarcely altered the symmetry of its ditch and ramparts. In each the entrance is placed, not on the side most defensible by Nature, but opposite a broad plain, where the chariots could manœuvre, wheel, and charge. At Letcombe a broad and level way, like that into the precincts of Stonehenge, leads into the fort. In the White Horse camp this is tortuous and flanked by ramparts, a change probably due to later garrisons, unequipped with the chariots of its first builders. Two waggons abreast might be driven into Letcombe Castle gate. A 'chariot' could not now be driven into the sister camp, for the present writer tried the experiment. The entrance was effected, the 'chariot' smashed. Ancient though it remains, the camp has been modernised,—perhaps by Roman engineers. Not so the Horse. No ancient monument is better cared for. The turf never seems to encroach upon the chalk rubble of its flanks, and the growth of down weeds and flowers is kept in check.

'The groom of the White Horse' lives in the manor house down below, and the image is maintained in its primitive colour of creamy grey. Below the Horse, facing the vale, lies that exquisite amphitheatre, flanked by its altar mound, the Dragon's Hill, which moderns call the 'Manger,' divided by verticle ripples of grass-covered chalk, and falling to where the waters break from the foot to form the sources of the River Ock, and the brook where 'Tom Brown' used to fish with the village boys of Uffington. Over this slope the wheel was rolled at the scouring of the White Horse, the prize for catching which was a fifty pound cheese from a milking of the biggest herd of cows in the vale. Mr Thomas Hughes survived the winner of the cheese. Jonathan Legge, of Childrey, whose victory, but not the cause of it, is chronicled in *The Scouring of the White Horse*, died in 1886; and this is the manner in which he trained to win. Jonathan lived at Childrey Warren, at the bottom of a deep hollow in the downs, with sides almost as tall and as upright as the 'Manger' itself. There are many such 'bowls' in the downs, and few even of the shepherds will run down them in a straight line, as it was clear must be done in a race down the Manger after the wheel. Every evening for months, Jonathan Legge would go up to the top of the Punch Bowl in Childrey Warren, and practise running down it. At first he ran slanting, but in



time he learnt to go straight, or altered his headlong course at will. In the evenings he played his fiddle, for like most of the Warren people he 'had a bit of music'; and every night he thought himself more certain of the cheese. When the great day came, the wheel was started at the crest, and after rolling fifty feet took a great bound of a hundred feet, and then went straight for the bottom. The tribe of Smiths, Blands and Archers, gipsies from the vale, had vowed to have the cheese, and started in full cry eager and tumultuous, but could not face the straight descent. Jonathan ran as straight as the wheel rolled. He 'flew' the road, dashed down the treacherous slopes of slippery grass, and as the wheel ran along the last gradient and curved towards the left, he changed his course and seized it as it tottered on the upward curve at the right of the flat field below.

## INLAND SPORT



## SPORT ON THE WHITE HORSE DOWNS

PARTRIDGE shooting on the White Horse Downs, so far as air and scenery contribute to its enjoyment, is almost as exhilarating sport as grouse shooting on Yorkshire moors. If a little more trouble were taken to provide nesting-places for the birds, large bags might be made in September, for the soil suits the partridge. Looking through our country notes, kept at Childrey for nearly twelve years, I see that before the greater part of our hilltops changed from arable to pasture, the stock of birds on the high downs steadily increased. This was most noticeable eight years ago, when the change from corn to grass was beginning. Some three hundred acres on one farm were then going out of cultivation, and a great part of this was for two years a 'flower prairie,' in which we shot all day long in a sea of scarlet poppies and yellow snapdragon. Part of the ground was rough rye grass. This attracted many coveys. The stock on the neighbouring ground was not large enough to get up a really good head, but we had nice 'domestic' shooting

among most beautiful scenery. On September 1st, 1889, the record gives twenty-three and a half brace of partridges, two landrail, one rabbit, six hares to three guns. On September 1st, 1890, the bag was almost the same as the year before, twenty-three and a half brace of partridges, six hares, three rabbits, one landrail to three guns. My father, the Rev. C. J. Cornish of Childrey, always kept his shooting for his sons, and the 'first' of September, unless it pours with rain, when no one can remain in the open, treeless, hedgeless downs, has ever been a day of happy memory. The different levels of the hill are never so beautiful as then, with their soft outlines of rolling chalk, set with the most brilliant colouring of golden stubble, green sanfoin, root crops and pink clover buds (on the heavier soil). All this vast expanse of smooth, rolling uplands is in the strongest contrast to the three adjacent zones. The rich timber of the ancient gardens, meadows and orchards, surrounding the house with big elms, cedars and limes, impinges on the treeless track like a rock in the sea. There we say good-bye to trees, and shoot for two and a half miles up the downs without the shadow of a leaf. But looking back over the vale of White Horse, the whole expanse for twenty miles looks like one immense area of park and timber, all turned to dark azure in the lovely 'blue weather' of the September day. From the house to the Ridge-



**PARTRIDGES ALIGHTING. By T. BARENGER.**



way, six hundred feet above, we not only find no shade, but not a drop of water, except that drawn from a well in the chalk, three hundred feet deep, by the farmhouse half way up. Then on the brow, after the last and steepest climb, we cross the green ribbon of the ancient Ridgeway, and step on to the flat upland, bounded by a long belt of green beeches and firs, and looking far away to Newbury, Inkpen Beacon, High-clere, and over the back of the White Horse, by Seven Barrows to the heights of Lyddington Castle above Swindon.

Our first of September shooting usually falls into three parts. We shoot the flat or 'black land' next to the house because it 'pays' to do so. There are big coveys, and it is easy shooting to begin with. Then we climb a hundred feet, and shoot part of a flat step, known as the 'white land,' because it is on the way to the hill. Then we climb the down itself, and have an hour and a half by the Ridgeway, lunch, and spend the afternoon there, because it is one of the most 'sporting' bits of ground that could be desired.

In country so different to the ordinary enclosed districts of agricultural England, the methods of shooting must be adapted to the ground. The nature of the crops, not the lie of the land, mainly determines the manœuvres of the day. Then as the late barley



or sanfoin are cut, the coveys shift to other ground, often half-a-mile away. Nearly all the best shooting early in the season is in these thin barleys or sanfoins, unless, as was our good fortune for several years, there is a quantity of rough grass uncut on the hilltops. The approved method is to try the light barleys, old sanfoin and turnips and rough grass, with a setter trotting gently at heel or walking up a 'furrow' ready to point a covey or road up single birds. Looking over the annals of several 'firsts,' I find that we generally reached the Ridgeway with five brace of birds and a few hares by eleven o'clock. This is after pretty hard walking, and a halt is always made on the edge of the ancient green road to rest, refresh, and admire the exquisite panorama of the downs and vale. We see for twenty-five miles north and east across the Thames valley, far into the Chilterns by Kisborough Cross to Gloucestershire and the Cotswolds, and westwards to Faringdon, Uffington and all the 'Tom Brown' country, and almost to the sources of the Thames.

The first beat upon the hill lies in a quite beautiful corner, between a long plantation, the Ridgeway, and a line of old down used for training racehorses on. In the centre are some farm buildings, and round this lies what is now the last piece of arable land on this part of the hill. The crops are rather thin, for no one troubles

to cart much manure up so far. But the birds are thick, and always forward. In 1892, as we were preparing to shoot this ground, an unusual conjunction of representative field sports took place at the Ridgeway at the same moment. As we were 'lining out' for the first beat on the hill, the old Berkshire hounds came trotting from the opposite direction along the ridge, out for exercise before beginning cub-hunting; and while we were 'passing the time of day' to the huntsmen, a string of thoroughbreds from the training ground on the down behind the plantation came filing and fidgeting past on their way to their stables at Sparsholt. Hunting, shooting and racing all met at the corner of Sparsholt firs. We were not long before we woke the echo which always came rolling back from this long wood. Close to the buildings nearly fifty birds rose, and went off in a brown stream, dividing into coveys as they flew. Some pitched in the road, and ran into the plantation—twenty were down in one patch of standing oats, twelve in another by the road; some in a piece of rough grass, some in an oat field beyond it. Here was an hour's work if well managed. We went round by the road and flushed several single birds, and then let the setter walk into the barley. This dog, purchased when the writer was reading for 'greats' at Oxford, and named Plato, was noted for many crimes and misdemeanours as a puppy, and for

many heart-breaking lapses in goose-killing and chicken-chasing in riper years. In the field he was quite first class, except for occasional fits of obstinacy. According to his custom, he just walked straight up to the main body of the birds and pointed ; then, after assisting to pick up the dead and wounded birds, at which he was wonderfully quick, he 'roaded up' all the single birds which the firing had started running about in different parts of the barley. The wind, which had risen almost to a gale, brought the sound of shots from the other side of the plantation, and over the trees came a covey of a dozen, some of which pitched near the barn. Till luncheon we worked this corner, finding fresh coveys, and picking up scattered birds, till we sat down at one o'clock with eleven and a half brace and two hares, getting the last bird in the empty cattle yard of the farm buildings. After luncheon we plunged into the rough grasses, and letting the setter range, began to enjoy an hour's old-fashioned shooting. We had point after point, the big black-and-white setter looking remarkably handsome as he ranged at full speed on a front of a hundred yards on this big open upland. Many of the coveys found were smallish birds, which we did not shoot at, but we found coveys of seven, ten, eight and sixteen fine birds, and having made up our bag to twenty brace, decided to leave off shooting. On our way home we picked up a leash more, making the

total twenty-one and a half brace of birds, six hares and one rabbit for the two guns. On September 10th we had another twenty brace with four guns on the same ground. There is not much incident in this 'downs' shooting. There are no hedges, and the art of finding the birds is less than in enclosed country. Straight shooting and good marking are the main requisites for making a bag. A good setter greatly helps the total; and if plenty of water be taken up, the downs are admirable ground on which to watch the dog working.

## THE GREAT TENCH CATCH

No one quite remembers who first started the idea that there were tench waiting to be caught in Colmere Lake. The time and place of its origin are, however, agreed upon. The time was shortly after the date when 'coarse fishing' begins, and the place was in the smoking-room, where we were planning how to kill time during the duller part of the rural summer.

Colmere Lake is celebrated for its heronry, its flocks of wildfowl in winter, and for monster pike but not for summer fishing. Still it seemed unlikely that its deep waters did not hold other fish, and the theory that these existed in the form of tench explained everything. For tench are not only the shyest of all fishes, but have the longest memories. They will bite greedily once in ten years. Then every tench in the lake grows suspicious, and holds aloof from any form of bait. For any evidence to the contrary, they might have taken wings and flown off to other waters. That is why the notion of a huge tench population, thriving

forgotten in the depths of the lake, 'caught on' at once. In the course of the week the surmise hardened into a certainty. The doctor, who was a keen fisherman, had it directly from the lips of an old labourer whom he was attending for rheumatics, that he 'minded' a huge haul of tench being netted in the lake some thirty years ago; and the curate, who was also an angler, was lucky enough to find an old woman who had fried some of the fish and corroborated the fact. But no recent record of a tench being caught was to be had in the neighbourhood.

From this, when we met next Saturday to compare notes, we formed two conclusions. First, that as no other fish ever kills a tench, some of those in the lake must be thirty years old; and secondly, that if they had bred at all, their number must be something quite beyond counting. Whoever first started the idea, to the doctor belongs the whole credit of the development to its legitimate conclusions. He 'rose and addressed us,' as the papers say, and put the case so well that we afterwards regretted we had not a shorthand writer within call to take it down. The substance of his remarks was as follows.

He reminded us that when once we had leave to fish (which we had not got, but no difficulty was apprehended), we were face to face with the chances of a lifetime. These tench were in the

state of Adam before the fall—ignorant of guile, presumably very numerous, and of monstrous size. He deprecated all hurry and excitement, and begged us to show ourselves worthy of the occasion, and endeavour to realise our opportunities. It was not a chance to be thrown away by just going down to the lake and taking our luck with a rod and a worm. Something better than that was expected of us. He concluded by proposing that all action should be postponed for a fortnight and that meantime everyone there present should every evening collect worms on his lawn and, putting them into a common stock, send them to spots selected near the lake bank for advertisement by means of ground bait. At the end of the fortnight the attack was to be made early in the morning by our united forces, armed with two rods apiece. We all bound ourselves to adhere to this programme, and for the next ten days worm-catching by lamplight on our respective tennis lawns became a matter of conscience with us.

It is not generally known how difficult it is to catch worms. When realised, it increases one's respect for the early bird who does catch them. They shoot back into their holes like a piece of elastic, and have to be stalked with as much caution as rabbits. In time we got to like it. A

lady who was among the keenest of the party said it *was* sport and was quite sorry when it was over.

Meantime we obtained leave to fish the lake, and fixed a Monday morning at six a.m. for the opening of the campaign. That Sunday night the rector, quite by accident, for we had kept our plans to ourselves, took for his sermon the text,—‘I go a-fishing,’ and we hardly knew which way to look, for that is exactly what we were all thinking about.

We did not catch any worms that night (Sunday) as we were all in a highly nervous state, and painfully anxious not to do anything which might set Providence against us; besides we had an enormous stock accumulated in bags of moss. But we made the most elaborate preparations of rods, lines, floats, baskets, camp stools (for the grass was certain to be wringing wet with dew at six a.m.); and as the ladies were determined to be of the party, the arrangements for an early breakfast were more satisfactory and complete than is usual when sport is to begin before civilised hours.

The lake was nearly three miles off, and as we trotted off in our dog-carts in the fresh, clear morning, before the fields were well awake, along the roads all powdered with dust, edged by grass all



sprinkled with dew, our hopes rose in spite of our natural misgivings. It is true that none of us had seen a single tench on our visits to the lake-side to deposit our ground bait. But that did not matter. We had evidence enough to satisfy ourselves that the fish *ought* to be there, even if they were not; meantime we had done all that we could to ensure success, and we felt that we deserved it.

The lake looked lovely. Herons slipped out of the big trees which fringed the side next us; the young wild ducks and their mammas were swimming quite tamely among the water lilies; crowds of rooks and jackdaws were chattering in the park, and where the shafts of sunlight struck the water or fell on the bank between the trees, little curling mists were drifting up from water and grass alike. The reed fringe at the lake head was broken in two or three places where our ground bait had been laid, and here on the dew-drenched grass we set up our rods, put on our baits, and cast the floats out into the lake.

We had not long to wait. In about thirty seconds or less—a shiver, then half-a-dozen little dips; then a steady rush of the floats was seen at the end of the doctor's line; and the next moment he was fast into something—a heavy fish not to be trifled with. We should all have rushed to see what he had got,

and whether it were a tench or not, had not exactly the same thing happened to each and everyone of our floats in the next half minute. Then a splash and a cheer from the doctor showed us that it was as he expected. He was fast in a three-pound tench and was in the act of landing him. And we were all in the same case; each had a fish, and that fish was a tench, deep, broad, slab-sided, covered with tiny scales of dark gold and honey colour, and thickly lubricated with something like liquid glue. They came on solidly and stolidly, just waiting for one to be taken off the hook and a fresh worm put on, and then cruising off with bait and float, as if there were no such thing as a hook or a fishing-rod in this wicked world.

In an hour there were four golden piles of fish lying on the bank, one by each rod, and the catch was going on as steadily as ever. We sent a boy up to the house to ask for a sack; filled it, and set to work to fill another. This we did by nine o'clock, and the tench were only just beginning not to be afraid of being caught—but to leave off feeding. We put our two sacks in the two dog-carts and drove home to our second breakfast. Then we sent the fish round to everyone in the little town to whom we could venture to offer them. In the poor people's houses the frying-pans were at work at luncheon,

tea and supper. Epicures stewed them with port wine sauce, and even we, who had had rather more than our share of tench in the uncooked state in the morning—for tench are, of fish, fishy—admitted that they were very fair eating. We caught another sackful next morning; and then the tench found us out. After eight a.m. not a fish would bite, and though several rods have visited the lake since, and caught roach, perch and pike, the remainder of the tench shoal will not look at a bait.

Perhaps in a dozen years they will have recovered from their fright.

## NETTING THE OLD CANAL

THE opening of 'coarse fishing' on June 16th always fringes the banks of the slow rivers of the south and east with a row of rods and lines. But though great the joy of the 'box angler' when he can once more carry to the banks of the Arun or the Stour his assorted cargo of tackle and bait, his enthusiasm pales before that of the fisherman *pur sang*, the man who has never abandoned the craft of primitive man, and captures his river fish wholesale, and with a net. Great is the hatred of the river angler for the river netter. He has banished the latter from all well-conducted waters, and he can only be found flourishing in nooks and corners of England, unless he be a poacher by profession, and one who works in darkness. But a 'village fishing,' conducted with the net only, and attended by select spirits, young and old, is a very ancient and a very honourable form of sport. 'River fish,' says a great authority, 'excepting trout and salmon, are of little worth. Nor are they, now

we have railways all over the country to bring sea fish to our doors. But the big fish ponds at Beaulieu Abbey, where the fat carp are sucking insects off the weeds all day long in the June sun, or the stews and pools at Sandbeck Castle or Helmingham Hall show the antiquity and importance of this old-fashioned netting of pool and river. It must have been the regular method first of stocking the 'stew-ponds,' and then of getting the fish from the pond to the frying-pan. Chaucer's franklyn, who was 'Epicurus' owne son,' must often have set his men to the job—

'Full many a fat partrich had he in mew,  
And many a bream, and many a luce in stew,'

and it must have been a jolly sight to see the monks and the lay brothers hauling the net on Thursday to get their Friday's dinner of carp and tench out of the Abbey pond. The beauty of the sport is that all classes can look on and enjoy it, and all can have a share of the fish. There is one parish, near London, where this 'village netting' is maintained as a public right. In other places it is a recognised and recurrent amusement, and this 'Jubilee Year' the village fishings were celebrated with a certain splendour. Among the waters where this custom survives is an old canal in the home counties, cut between deep banks, wooded and overgrown with flowers, where traffic has dwindled

and fish increased. When the hay is cut, people begin to ask, 'When shall we have a day's fishing?' 'Fishing' means an evening with the nets on the old canal. Word is sent round early, and leave got from the farmers and landowners by the 'river,' as the countryside agrees to call the canal. Everyone is asked, and not only the farmers and their sons, but the sexton, the village tailor, the blacksmith, one or two labourers, many boys usually turn up to share the fun. One contributes a big jar of cider, and another arranges that the nets shall be there in time, and that is all the preliminary needed.

The nets are peculiar. There are two sets in the village, one owned by a farmer, the other by a kind of 'irregular sportsman' who lives near the canal. We borrow them on alternate 'fishings' so as to raise no feeling on either side. They are merely two lengths of ordinary netting, four feet deep, with sinkers at the bottom and corks at the top. Against this is laid a subsidiary net, with meshes sixteen inches across, on the side opposite to that from which the fish are expected to come. When a tench or pike charges the smaller meshes, these bulge out into a pocket through and over the big mesh behind, and the fish 'bags' itself. We assemble at the bridge and the company divide, some keeping to the towing path, while others go

across the water to hold the nets on the far side. Both the waters of the old canal and the banks on either side are alike beautiful in the early summer. The banks are covered with great bushes of pink wild rose, and the big hedges and small plantations which border it are full of white dogwood flower, and the bank thick with ragged robin and snap-dragon. The water plants and those on the very edge of the canal are in full flower—arrowhead, burr-reeds, pink flowering-rush and great docks in the canal itself, and comfrey, loostrife, yellow and purple vetch, rock-rose and speedwell on the towing-path bank. We see a rival fisherman, a kingfisher, dashing down the canal, and have not been long at work with the nets before a nightjar, perfectly tame, comes hawking up and down past us as we disturb the evening moths from the grass and bushes.

Our first fishing always begins between two small woods, where the canal is deeper than ordinary. Someone always remembers to have seen at this spot some very large pike or tench the Sunday before, and gives the details while the nets are being got ready. We never catch that fish, but it is cheerful to hear about it. Then the two nets are laid across, some fifty feet apart, and the intervening space is carefully 'dragged.' The drag is a heavy piece of

cart chain, fastened at each end to a length of rope. This is dragged with a sea-saw movement along the bottom, stirring up plenty of black mud, and frightening the fish forward to the lower net. As the chain nears this, we all crowd up to the side and watch the corks. First one cork shakes, and bobs under, then another, and then there is a sudden dash into the net and a violent struggle, in which something like the side of a silver cream jug appears for a moment in the net. This is clearly a jack, which are violent, harum-scarum creatures, and do not get caught with the solemn decorum of a good old tench or carp. Then comes the hauling in of the net, which is more exciting still. The old fellow who owns the net does this, pulling it in hand over hand, and picking out the weeds with provoking slowness. Then there is an exclamation. The first fish, a great lovely yellow golden tench is flopping in the net. There are no small tench in the canal. They are all big, from one pound to three pound fish, and most splendid to look upon. We haul in two more beauties, and a three pound jack, and spread them on the bank among the flowers to be admired. The tench are just like a piece of Japanese lacquer sprinkled with gold dust. This dull gold shades into the most exquisite olive green upon their backs, and brightens into



polished gold upon their bellies. Their eyes are black and gold, their fins gold and red ; in fact, they look as if they had been touched by Midas's gold-compelling fingers. Under the bridge we expect to enclose a shoal of perch. These are wary fish, and the nets are thrown across smartly and drawn tight at once. Long before the dragging chain reaches them the shoal dash at the net ; some strike it and mesh themselves, and we see their shiny, striped sides gleaming in the meshes ; some rush back and charge the other net ; some leap over the corks and dash away down the canal. The perch are much smaller than the fat and well-liking tench, the best not more than one pound in weight. But the flavour of perch is as good as that of mackerel—or such mackerels as we get inland after a railway journey ; and the company think of supper and rejoice. Our total catch usually comes to some fifty big tench, half-a-dozen jack, and, if we are lucky, a dozen perch. These are equitably divided between the 'riparian owners' and the providers of nets and cider, and a good many brace of fish are 'passed on' by the first recipients to other friends and neighbours in the village.

## SHOOTING ON THE CARRS

AT the time when our shooting on the White Horse Downs was at its best, I was able to vary my sport in the September shooting in a very different country. This was on the edge of one of the reclaimed fens of South Yorkshire, a district with even more specialised natural features than the Berkshire Downs, and in marked contrast to those high and waterless plains and hills. Three hundred years ago this fen, then called the 'carrs,' was a huge marsh. Then Sir Cornelius Vermuylen drained it, Smeaton, of Eddystone fame, completed the work, and it is now practically reclaimed fen ; but very different from the fens of Cambridge, and very much more beautiful. I speak now of the fen above Doncaster, which was formerly a marsh valley some two miles in greatest width, with low hills of fertile land on either side. But adjoining the higher land was a big annex of fen or 'carrs' in the valley beyond, each adjoining property possessing a portion of the reclamation. The whole of this ground was as charming for partridge shooting

as can be imagined, and with such a variety of scenery that one never could have enough of it. At one house near, where I was a frequent guest, beautiful springs of clear water bubbled up in the park on the higher ground, and soon formed a long running dyke, bordered with thick reeds and plantations, and full of moor-hens, with a few wild ducks and teal in early September. The estate was bounded by a brook on either side, that on the south being deep, rapid and winding, often holding duck in the autumn, and nearly always in a winter frost. On this brook was one of the finest groves of black poplars I ever saw, shading a deep pool called the 'Bottomless Pit.' One hot first of September, when all the corn was still standing, and I had shot a few brace of partridges early on the stubbles, I went to this pool, partly to give the dog a swim, partly to enjoy the shade of the poplar grove, and the rustle of leaves by running water. Hardly had the dog splashed in when a brace of wild ducks rose from the pool, soared up through the trees, were dropped right and left, and came tumbling through the branches back into the water, from which the setter retrieved them.

All the higher ground was highly cultivated, and very well farmed. There were fine clean stubbles, fields of 'seeds' or rye-grass and clover mixed, three or four big potato fields on one farm, and dozens of acres of deep 'roots,' mangold, turnips, swedes, and rape. The



**TEAL ALARMED. By A. COOPER, R.A.**



'carr' land was absolutely flat, with soil as black as soot, divided by wet dykes, and studded with small woods. When I first knew it, there were a good many wheat fields right out in the distant carr. These were the feeding-ground of the partridges bred in the rough grasses, with which the 'carr' was mainly covered. In the evening they swarmed with birds. Then there were big flocks of plover, of which one generally killed a few, and a fair sprinkling of hares and rabbits. But the charm of the carr was its solitude, the absence of any houses, farms or roads, and the absolute privacy secured by wide, unbridged rivers and dykes. My host was often good enough to give me a week single-handed on this ground, and though the largest bag I ever made was fifteen brace, with some plover and hares, I never had a bad day there. The success of this particular day was so chequered that it is a fair example of the ups and downs of single-handed shooting. My only companions were a very good black 'dropper,' bred on the moors, and very staunch and well broken; a boy of thirteen, whose father was the principal tenant on the estate, farming, I think, seven hundred acres; and a delightful old servant of the house, who was, strictly speaking, the woodman, looking after the trees, and doing field-carpentry and rail-making, but he liked coming out shooting, and though he was

then over sixty, always declared that 'he was as nimble as ever he was.' Good looking too, and always nicely dressed, with a blue-and-white handkerchief and small Gladstone collars of checked cotton. That morning he had a long story to tell about the iniquities of somebody's 'beasts' (cattle are the woodman's natural enemies) which had broken in across the stream and damaged a plantation. 'Ah we're that throng wi' the beasts and wi' riving new rails to stop them coomin' ovver agean, and make 'em bide their own side of t' river that Ah doubted Ah should not be able to join your coompany,' he remarked, when he did turn up rather late. It was nearly eleven o'clock, and the September sun was blazing in the steely-blue sky—just the kind of morning for birds to hide away in unlikely places. Our little party was too small to beat the big fields of roots, and our main reliance was on our own knowledge of the ground and the habits of the birds, and the excellent good qualities of the dog. This animal, though bred between a setter and a pointer, showed no trace of the former breed in his appearance. He was like a big, heavy pointer, as black as soot, absolutely staunch and true in his points, and with a habit of 'flopping' down on his stomach when close to birds, and wriggling along on the ground, when he looked just like an enormous black eft. We went across the park, and tried care-

fully round no less than four fields of 'seeds' and a small swede field before finding a bird, though the woodman declared that when he passed that way before breakfast the place was 'fair wick wi' 'em.' Then the dog pointed under an oak in a shady corner of a seed field, and a covey bounced up and flew all round our heads. I missed both barrels. The birds joined again and skimmed back over the park, and we began to feel helpless and hopeless. It was twelve o'clock, and we had only found one covey, missed them, and lost them. Remembering Mr Facy Romford's aphorism, 'If you were a fox, where would you be lying?' I set to work to think out the likeliest place for the birds to have hidden themselves. If they had been people and not partridges, they would have been sitting with their feet in the brook, or somewhere close to water. As it was, I concluded they were dusting under some cool hedgerow, and not in the great, green mangold and rape fields close by. There was a favourite hedge for dusting not far off, with a mangold field adjoining, so 'fetching a compass' to bring the hedge up the right way, I walked up it, with the dog at heel, having left the old man and boy to work over the root fields. I rose five coveys under that fence, and the black earth was as full of dusting holes and feathers as a chicken run. I shot a brace, and then worked the mangold field adjoining. There, though the coveys



which had pitched in rose wild, I had eight more birds to successive points, the dog trotting from one point to another, and sitting down meekly among the roots when the bird was dropped. This gave us five brace, and we felt more satisfied.

We strolled back across the park to lunch by the stream, with the understanding that if the woodman were not too 'throng' with work after his dinner, he should join me at 2.30. The dog having had a swim, and let the water run over his lower jaw and teeth, as if he were a bronze spout in a metropolitan fountain, fell fast asleep, and after luncheon the boy and I were nearly in the same condition.

The old man appeared. He was anxious to change the beat and spend the afternoon on the carr, where birds were more easily flushed than in the heavy roots. We made straight for the flats, taking the fields by the stream-side on our way. Here a great covey of seventeen sprang wild, but left one bird behind. As they flew on, another covey joined them, and some thirty birds were marked down by the side of a wide dyke which joined the stream. It was a perfect place to kill birds in, for the stubble on which they had pitched was deep and weedy, and the dyke side covered with willow herb and tall grass. Moreover, they were marked to an inch, under a big oak. I walked straight for them with the dog, and when

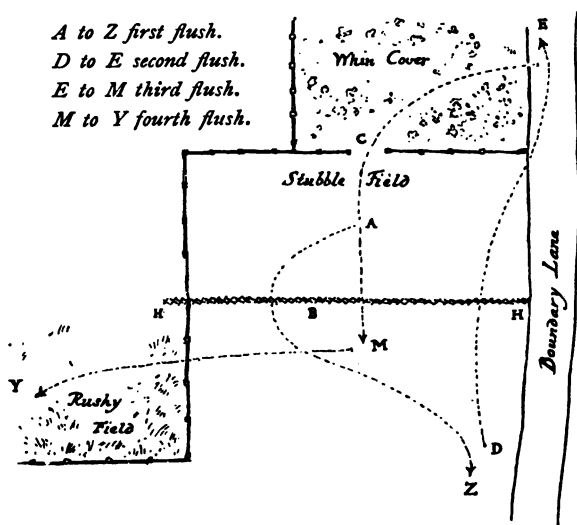
once within range of where I knew those thirty birds were all lying and looking at me, while I could not see one of them, I let the dog draw on, in the enjoyment of that delightful certainty which a well-marked covey within twenty yards of one always affords. The dog pointed, and then 'flopped' on the stubble. Then I saw that the whole lot of birds must have run into the grass by the dyke. As they could get no farther, I persuaded the dog, who was in a state of solemn ecstasy, to draw on. Then the whole of the first covey rose and flew across the dyke, and I dropped a brace on the lovely green meadow on the other side. Just as I had crammed in my cartridges, the other lot rose and I had two more, all four birds lying on the grass across the water. These birds were now out of bounds, but there were plenty more farther down on the carr. I decided to keep on along the brookside, and then try up a long hedge, dividing the last corn field from the carr grasses. The dog drew on and pointed in the middle of some tall pink-flowered weeds, which are common on this peaty soil. Twelve birds rose like a fan, and I had a brace. The rest we marked in a tussocky corner of the carr, in an angle of the embanked river. Not twenty yards farther on there was another point, and two big coveys rose wild, skimmed over the fence, and, to our joy, all pitched close to the first lot, in the most

beautiful cover the heart of a shooter could desire. We gave the dog a drink, walked down to give him the wind, and let him find the birds just as he pleased. Being a very well-educated, careful, automatically-working sort of animal, he covered himself with glory. He pointed our first covey, which rose together, and only left one bird behind them, and then he crept and wriggled from point to point, finding the last two coveys all scattered among the tussocks. Some of the birds had 'got crope in among the grass,' as the old man remarked, and before them the dog would sit down and look round at us as if to ask why we did not make the birds rise? In five minutes I shot six and a half brace in that grass. This gave us fourteen and a half brace, when, to my disgust, I found that I had left my spare cartridges under the tree where we had lunched, and had only one left. I had also promised to be in by five o'clock, so we walked homewards. But our luck was not quite over. We flushed a covey near the park, and one bird was marked down in some nettles. Walking up, we rose him, and killed him with the last cartridge, whereon the boy chucked up his hat, and the old woodman graciously observed that he would 'allow' that we had done very well.

## WINTER SPORT ON THE CARRS

THE day's sport described in the preceding chapter took place in the hot weather of the 'Leger' week, and if I remember rightly, on the day between the 'Leger' and the 'Cup.' Our next visit was a rush up North, in an intense frost after Christmas, in the hope of catching the duck which then frequent the never-freezing springs in the park and the upper waters of the brook which flows from them. I arrived late on a Saturday night, and on the Sunday evening was down by the 'Bottomless Pit' pool just before sunset to see if any duck were come in. I do not ever remember to have seen such an intense frost; as it proved, it was *too cold*, and spoiled sport. But that evening every drop thrown up by the little waterfalls and trickles froze as it fell, the flat meadows and the grass were like iron, and the chinking of the ice round the bases of the tall feather-topped reeds sounded like little bits of metal falling on steel. There was a dull red sun, but

even that did not look warm, and the great black poplars and alders by the dyke looked as if made of ebony frosted with silver. Every bit of still water was frozen hard, and even on the everlasting spring, and down its warm 'dyke,' there was a fringe of ice. But in the water the weeds looked



as green as ever, and the warm vapour was rising like steam from the 'Bottomless Pit.'

Five ducks in a V came flying up from the carrs, and after two turns up and down the stream, plunged into the running water. Then as I stood under the very oak by which I had shot my first

four birds after luncheon in my September day, a couple of duck swept past quite low, flying up the dyke only just clear of the reed tops. Thinking what a pity it was that this was Sunday, I walked back towards the house. As I passed a small cover by the stream, a flock of fieldfares came flying in. There were such a number that I stayed to watch them. The flight went on for nearly nine minutes, and if one passed over there were a thousand. They were very starved and quiet. The former fact I verified by shooting some next day.

That next day was a bitter disappointment. The frost had closed up every one of the large lakes in the neighbourhood from which the duck used to fly to the unfrozen pools described above. So they moved south in a body, and it was not until after a partial thaw that they returned. Then came a heavy fall of snow, and I went out with a couple of strong fellows, to whom the frost had given a holiday from farm work, to 'look round.' We flushed a single duck, and then a pair out of shot. Then the shepherd came to tell us of a big covey of thirty partridges that he had just left sitting in the snow near a rough common known as the 'Whin Cover.' I also saw a covey in the snow, and the men drove it neatly over my head, when, though no great shot at driven birds,

I bagged the old cock. Our campaign after the big covey was rather amusing; much more so than many days in which I have made really good bags. The big pack—nearer forty than thirty birds—was lying on an open stubble at A. Above this was the 'Whin Cover,' about three acres of rough broom and furze. On the other side was a high hedge marked H, and below this the 'carrs,' all covered with snow. A wide lane formed the boundary. Standing behind the hedge at B, I sent the men round to the lane, and told them to flush the birds. The whole pack came over the hedge about forty yards to my left. I killed one bird, who fell and buried himself in the snow. The others swung round, and all settled on the carr, just by the boundary fence, where I could see them running like mice on the snow. The men hurried down the lane, got below the birds, and flushed them again, sending them over the cross hedge, where I was standing at X, but out of shot. A small lot of eight birds had joined them. They flew on, and all pitched in the lane just outside the Whin Cover. After a hard 'think,' I concluded, that if the men got round them, they would probably cross the Whin Cover and fly to their original field, crossing the fence at a gap where two rails were broken down. I had noticed birds take this flight before, and though there

was nothing to prevent these birds going in any other direction except that from which the men were coming, I had an instinct that they would take this line. I crept up to the gap C, sheltered behind a small bush, got a few cartridges out and laid them on my cap, when I saw the whole of the big lot rise, skim over the furze, and swing round straight for my post. There were such a lot, and they were so low, that I wished they had been broadside on. But I killed a brace which were flying almost at my head, and another bird was hit by the shot and came fluttering down just behind me. I remembered the small lot, and had just time to cram in one cartridge when these came on exactly the same line, and I got another bird. We felt highly successful after this, and though the men were rather tired of tramping in the snow, we followed the birds on to the carr, and sent them forward into a rushy field, covered with hoar frost and ice spikes. There I ought to have killed five or six, for the birds were tired. But I was tired also, and only got a brace. After luncheon we crossed the carrs to the 'Black Wood'—a dark and unsatisfactory cover which ought to hold game but never does. I shot a brace of hares and missed a snipe, and then proceeded to the 'Black River' and peeped over the bank. Just under my nose a mallard got up, and



I shot him. He fell across the stream. I suggested to one of the men that if he went round half-a-mile he would be able to cross by a bridge. He took a few steps in that direction, and then remarking apologetically, 'Ah think this'll be t' gainest way,' he descended the bank, stamped right through the ice, which had broken up owing to the water falling to a lower level, and walked through ice, mud and water half way up his thighs to the other side. He then collared the drake, swung it over, and waded back. Our way home lay across the grass carrs, all deep in snow, and then by the brookside along a mile of sinuous curves. Several small bodies of duck were on the wing, but all wide awake, and at a great height, evidently reconnoitring to see if there were open water on the main river. We reached a small plantation some way up the stream before finding anything more interesting than starving blackbirds and thrushes seeking food by the water's edge, and a kingfisher or two. But by the plantation, where a running ditch joined the brook, there were at least a dozen water-rails, which squattered off in all directions, and ran or flew into the cover. These water-rails must have suddenly migrated to this corner, for a few days before there were none. I did not fire at any of

these birds, and was rewarded by getting a very easy shot at a duck, which rose behind a willow. As the plantation was mainly low cover and brambles, we walked through it, and found a covey of partridges, a snipe, and a moor-hen. I shot a partridge, missed the snipe, and caught the moor-hen in a snowdrift. Coming out over a low fence a hare bounced out, and was shot. This concluded our bag, for though I had an excellent chance at another duck, which rose from among the tame ones on the water by the farm, I missed him, and he flew off, quacking, to the carrs.

## IN SALCOMBE CLIFFS

THE widest bay on the English coast is that which stretches from Portland Bill to the Start. This embraces an inner bay, from Beer Head to Otterton Point, seldom seen from the sea, because it lies inside the line of Channel navigation, little visited by land, because the coast towns are few and small, and little spoken of in books, except by Dean Buckland, who, in his *Reliquiæ Diluvianæ*, described its natural features with an accuracy and picturesqueness which lose none of their value because their author subsequently abandoned the conclusions which he then formed from what he saw. Its coast is formed by a series of immense precipices—the ends of parallel ranges of the Blackdown Hills, once a great elevated plain, now intersected by coombes running at right angles to the sea, and cut off with such regularity and exactness that the whole change of strata, from the white chalk of Beer Head to the crimson cliffs of Peak Hill, are seen as in a coloured map.

On the edge of Salcombe Cliff the furze common, which once covered the plateau, still remains, though the buzzards, the black game and the roe deer, once found in the district, have disappeared. The short rabbit turf runs on to within a yard of the verge of the cliff, where vegetation dwindles to mosses, then to tiny, green, dust-like spores, and the land breaks off as sharply as if pared with a knife into a green sand precipice of two hundred feet. Below this, in infinite confusion, lie loops and pockets of tumultuous ground, overgrown with masses of thorn and furze, tangled and matted with clematis, waving reed beds, clusters of ferns, jungles of green iris leaves, hartstongue, berried ivy and wild rose, melted by distance into a cloudy mass of yellow, green and purple, with crags of crimson sandstone, and edges of rosy, crumbling marl. Lower, but rarely seen from above, are the red scarps of the lower precipice, and, beyond all, the gently heaving sea. The structure of these cliffs is such that their whole extent can be seen neither from the summit nor from the base. The jut of the middle cliff, with its hanging gardens of reeds and iris beds, clematis and blackthorn, furze and ivy, divided and intersected by tiny streams, and natural raised borders of grass and fern, screens the horror of the red precipice below. As the downward gaze falls on the seductive region from the sharp edge of the summit, the temptation to

descend and plunge into the mazes of the forbidden ground is hardly to be withstood. Yet the cliff should never be entered without a guide. It is no common crag, to be scaled or avoided according to the obvious warnings of the ground, but a confused and intricate region of mountain side, below which, hidden and abrupt, is the unbroken line of precipice, to step beyond which is death. Animals, equally with men, lose their sense of danger in the Salcombe Cliffs, and seem, like men, affected by the sense of careless exhilaration which the immense expanse of air, light and seaward prospect lends. Even the rabbits which fight on the ledges are picked up dead and smashed upon the beach below. A chapter could be written on the adventures of their natural enemies the dogs—collies, terriers and paniels—which have rushed over the precipice and perished, or have been rescued, as Highland shepherds rescue mountain sheep, from some midway ledge on which they have fallen. Recently, a young collie, which had joined in a rabbit hunt, in the independent way in which Devonshire dogs present themselves as volunteers at the sound of a gun, ‘went out over,’—that being the local euphemism for a fall from the red cliff. A jut of cliff intercepted its fall, and for three days and nights the dog remained upon the ledge, whence its howling and barking could be heard above the screams of the angry sea fowl, the natural inhabi-

tants of the precipice. It was at last rescued by a fisherman. Five hundred feet of rope were lowered from the summit of the hill, and made fast below. Up this the rescuer climbed, and man and dog met, with perfect understanding on the part of the latter, on the narrow footing of the marl shelf. The dog 'tük to 'un zo kindly as a child,' in a Devonshire farmer's phrase, and allowed itself to be made fast to the rope, and drawn up to the summit, after which its rescuer was lowered to the beach. The dog went back to its sheep, and the man to his nets; but whenever they met in after days, the dog knew and welcomed its preserver. Horses are no longer kept on the cliff-bounded fields. They have a curious habit of 'back-ing' unconsciously against the wind, until they reach the edge of the precipice. Recently the fishermen below watched a horse stepping backwards at each gust from the sea, until, without it being in their power to aid, the animal's hind feet slipped into space, and it 'went out over' to death.

But the strangest tale of the Salcombe Cliff remains to be told. Some ten years ago a fisherman, searching the foot of the highest cliff for the bodies of such rabbits as might have fallen over in their perilous battles during the night, found, lying in a deep bed of soft, red marl, which had oozed out of the face, and spread for some yards over the shingle,—not a

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rabbit, but a young lady, apparently dead. The clothes were half torn from the body, and her leg was broken; but when carried to the coastguard station at Sidmouth, the fishermen's wives declared that she was alive, and the doctor assented. For a fortnight she remained unconscious in the doctor's house, and when she recovered had lost all knowledge of her fall, except that she had been standing on the summit of the hill, gazing over the sea. From the marks on the face of the upper cliff it appeared she had rolled down the first and second sections of cliff, and then fallen over the vertical precipice, which is at this point more than two hundred feet high, on to the soft bed of marl, which lay like a cushion below. The total height from summit to foot is four hundred and ninety-four feet. Yet the lady recovered, married, and is now a mother.

But the base of the red cliff has yielded other 'finds' far more precious than rabbits, and, indeed, in the eyes of science, than young ladies. Beyond the lovely Sidmouth Bay are the all-red precipices of Peak and High Peak, and there, in a fall of cliff, was found the body of a 'marl-toad,' a 'toad so big as a sheep.' There was a time, so the fishermen say, when they must have been as common in the cliffs as rabbits. Not quite so common perhaps. The 'marl-toad' was a *cheirotherium*, the 'hand-monster,' so called because before he was

identified in the flesh or bones as a 'marl-toad' only the impression of his great toad-like hands and feet had been known to palæontologists. But found he was at last, in the red marl of the Sidmouth Cliff, and the fisherman's name may be commended to the notice of the 'fancy' when the time comes for the next list of extinct British monsters to be compiled for popular reference. The thickets in the upper and middle line of these cliffs afford shelter to hundreds of rabbits, which breed in the holes with which the steepest faces of the soft strata are honeycombed, and, besides the rabbits, wild pheasants, and even partridges, often nest there. The latter have a habit of returning to their old home when flushed on the hill above, flying right out over the sea, and then turning into the cliffs.

To beat covert so holding as this is no easy matter, but the sport is good, and the bag to be made is varied—for, in addition to the game mentioned, blue pigeons and often woodcock are found there. Fortunately, the district is well supplied with the best class of dog for the purpose—hardy liver-and-white spaniels, that give tongue and drive the rabbits fast. But even these cannot stand more than two or three hours of such work, and occasionally some too eager dog in hot pursuit of a rabbit finds himself too near the edge, and ends his career by a fall over the dangerous cliffs below.



The following is a fair example of the kind of sport to be obtained there late in the season. All the available dogs of the neighbourhood had been borrowed in addition to the regular pack, which formed a well-disciplined body under the control of the keeper. He had also to control, as far as possible, the constant 'excursions and alarms' of the miscellaneous recruits from the farms and village, for which he had provided himself with a thick ashplant and a whistle. When all were assembled, the party was found to consist of five guns and a dozen dogs, two-thirds of the latter being 'effectives,' while the remaining four were more noisy than useful—'good,' as a coastguard remarked, 'for saluting.' We entered the cliff by a narrow path in Indian file, and soon found ourselves among the potato plots and gorse coverts.

Here our leader, who had crammed his head into a most uncompromising hard felt hat, because, as he darkly remarked, 'It was such a protection,' duly cautioned the younger members of the party against reckless shooting, and after posting the guns, returned to start the pack. I clambered to the pinnacle which had been pointed out to me, and after making out the position of the only two guns in sight—one above, the other below me—waited for the sport to begin.

In front was the covert—thick bramble and blackthorn scrub—with a strip of cultivated ground outside. Below this a smooth strip of turf, commanded by the other gun, ending in a precipice falling two hundred feet to the beach, off which a few sea birds were slowly wheeling. Above was a steep slope of greenish sand, full of rabbit holes, which I commanded, as did the third gun.

By the time that I had completed my observations, the merry chorus of the spaniels echoing from the cliffs broke out at the other end of the covert, and, as the rattle of the shots fired by the other guns began to be heard, the rabbits commenced to steal down to our end, some turning back, others sitting up and giving easy pot shots, or dashing along the steep slope above to their holes. I soon found that these last required very careful shooting, as the surface of the cliff, though apparently level, was really very uneven; besides which it was honey-combed with holes, and, unless taken quickly, the game was soon under cover.

The fun had not lasted five minutes before a shout of 'mark over!' was heard, and a covey of partridges, which we must have put in from the hill top unnoticed, came diving round the corner. Often a covey rises on the very verge of the cliff, and not unfrequently a wounded bird towers far out

at sea, and falls five hundred feet into the waters. I have seen a winged bird run over the edge and fall and flutter half way down. An old brown spaniel descended cautiously at a foot's pace, and returned by a circuit with the bird alive in his mouth.

The next beat was of a different character. A stunted furze brake ran up the face of a steep slope, narrowing gradually towards the top. The rabbits all went upwards if possible, so most of the guns were placed at the top, one only guarding each side. Here the rabbits were even more numerous than in the first; but the dogs were by no means so fresh, and most of the strangers were inclined to shirk; still, they rattled the covert fairly well, and all the guns were kept busy. We tried patch after patch of cover, the dogs sometimes *creeping* after rabbits in cover on the very verge of the precipice; while the rabbits were hopping, bolting, or sneaking away in every kind of ground, and on surfaces set at all angles to the perpendicular.

The dogs would never work for more than three hours, but while the fun lasted they enjoyed it as much as we did, whether they belonged to the regular 'army' or were only volunteers. It was quite a feature of this shooting to watch the way in which spaniels turned up at the sound of shots, and enrolled themselves for

service. It is a fact that when after an absence of some years from Devonshire I returned to the place, and was shooting a wood not far from this cliff, so many volunteer dogs appeared that I had four at once tied up to one tree. They were all spaniels, and all hailed from the same parish. The day before I had hired some ; I might have saved the money ; for a few shots would have brought all these keen hands to my aid unbought. The close of one of these days of cliff shooting was marked by what the papers call 'a painful incident.'

Among the borrowed dogs was one belonging to a sporting tradesman in the village, whose partial owner was in the habit of describing him as a 'fine, upstanding, *slammicking*' dog, whatever the last adjective may mean. 'Slammicks,' as he was always called, was what is known as a fine single-handed dog—that is, he always worked for himself and by himself, driving a rabbit from one end of a covert to the other. Did you fancy that there were five or six rabbits in front of you ready to bolt as the pack approached, it was ten to one that Slammicks appeared, long before the rest, and sent them all back into covert, after which he would hang about and hunt the end of the covert by himself. It was on one of these expeditions that he came in line with a rabbit, at which my neighbour was in the act of firing, and was soon seen hopping off home, howling dismally.

Poor Slammicks ! small was the sympathy bestowed upon him.

‘Which dog is it?’ inquired our host, anxiously. ‘Slammicks, sir,’ said the keeper ; ‘Mr B.’s dog, sir ; but you’ve no call to trouble. He borrowed our old Bounce last Christmas twelvemonth, and shot ’un dead, so he is all to the good still !’

## **‘PARADISES’ FOR WILD ANIMALS**



## THE MAKING OF A 'PARADISE'

WHENEVER the next reign begins, the nation will have to arrange a fresh bargain with the Crown for the surrender of the Royal Forests. It is probable that many of these Crown domains will then be taken over by Act of Parliament, and kept, as the New Forest is kept now, as land 'open and wild.' To this will be added powers for preserving in them all the indigenous wild animals and birds; and the national forests will become, as the New Forest is now in some measure, sanctuaries for all the *feræ naturæ* of England.

This is what the Greeks, borrowing a Persian word for a Persian institution, called a 'paradise.' These were parks of great size, 'filled with all kinds of trees and all varieties of beasts.' They contained lakes and streams, and were often walled, though some of the survivals of these paradises in India, notably that of the Maharajah of Jeypore, are maintained without inclosure, by the force of law and the sanction of religion; and the animals,



never molested, become absolutely fearless of man. In the paradise at Jeypore, the black buck antelopes, usually so wild as to be unapproachable, wander in security over the cornfields, and may be seen sleeping like dogs by the side of the railway line. The engine-drivers have been accused of 'potting' them there with a revolver, and hiding the carcasses in the tender, until the train has passed out of the district. The maintenance of this paradise led to an unusual difficulty, showing that hunting, the more usual object of a 'paradise,' cannot in all cases be dispensed with, and that non-carnivorous animals, if man be disarmed, may supplant him in the struggle for existence. In consequence of the great increase in the number of deer and wild boars, the inhabitants of one village collected their cattle, loaded the carts with their goods, and 'trekked' in a body to the principal square of Jeypore. Thence they sent an ultimatum to the Prime Minister to say, that unless they might kill down the wild swine they would migrate in a body to the territories of Scindiah. This was serious, for on the one hand the Maharajah, as the one hundred and fourteenth in direct descent from the god Krishna, could hardly consent to a request involving the destruction of animal life. On the other, it was intolerable that a whole village, a source of revenue, should be trans-

ferred to the territories of a rival and a Mahratta. After much debate, permission was granted, and the wild pigs were killed down.

In this country public attention has been so generally diverted to the *sporting* objects of a forest, and the harshness of the forest law has stuck in our minds with such curious persistence, that we have almost forgotten that under the milder code, after the granting of the Charter of the Forests by Henry III., they were the most perfect sanctuaries for wild animals ever devised by the mind of man. The definition given by Manwood leaves no doubt of this.

'A forest is a certen territorie of woody grounds and fruitful pastures, priviledged for wild beasts and foules of forest, chase, and warren to *rest and abide in*, in the safe protection of the King for his princely delight and pleasure . . . and also replenished with wild beasts of venerie or chase, and with great coverts of vert for the succour of the said wild beasts to have their abode in.' In these precincts, designed for the beasts of the forest to 'rest and abide in,' they harboured for centuries, often unmolested for years at a time, when the forest was in some distant country, and the King aged, or much taken up with affairs. In the Queens' reigns they were still more rarely dis-

turbed, and even where the ancient protection has been withdrawn, these old forest sanctuaries still hold the few remnants of the harts, bucks, and other beasts of the forest and the chase which still survive as wild animals.

Before the attempt at a reconstruction of the forests as sanctuaries is made by the public, some private owner, who shares the ancient feeling that a 'forest is the most highest franchise of noble and princely pleasure,' might be tempted to make the experiment on a minor scale, and give the public the benefit of his experience.

'The restoration of a Norman forest is a most fascinating idea,' writes the owner of a large north country estate. 'To live on a place of sufficient size—say part of Dartmoor, with all its surroundings, the skirts of the moor where the streams break away through deep valleys on to the low ground, with one side of it bounded by the sea—rocks and a wild coast—with wild beasts of all sorts, very few inhabitants, no railways, no ports, and no telegrams, tracts of woodland where one could be lost, sweeps of down to gallop over—in fact, all the things that would make going out every day a delight—presents to my mind a vision of paradise than which I can conceive nothing more delightful. But where on this earth could such a paradise be found?'

The ideal requirements of such an area could not be better set out ; and the possibility of realising them in part is not so remote as might at first appear. The site for such an experiment would depend on what estates were in the market ; but the columns of the *Field*, and the advertisements of property agents in the daily papers, show the enormous proportion of the land of this country which changes hands every year. Except the entailed estates of the largest proprietors, there are, unfortunately, few areas of British soil of which a would-be possessor might not reasonably hope to become the owner at a very moderate cost, though not at 'prairie value.'

Much of this land does not pay for cultivation. Take, for example, the greater part of the Berkshire Downs beyond the 'Ridgeway.' This is not ideal land for a 'forest,' as water is scarce. But much of it is full of natural cover, woods, fern and furze ; and dense thickets of whitethorn spring up naturally when it is left to itself, from seeds planted by the birds. Land in this district has changed hands at £7, 10s. and even £6 per acre. But such ground would be more suitable for a great game farm than a 'paradise' ; and it would almost necessarily require inclosure. But in Essex, where land is equally cheap, an estate near the coast, with a good salt marsh, and a tidal creek bounding one side, would form an

excellent site for the purpose. Essex, though a clay soil, is admirable ground for game and deer, even in the unpromising neighbourhood of Epping Forest. Wild fowl abound on the coast, and a 'lake sanctuary' could always be established. If a corner, such as that lying between the River Crouch and the Chelmer, could be secured, a natural boundary on two or even three sides would be formed by the sea and estuaries. Farther east, the coasts of Suffolk and North Norfolk offer ideal sites for a sanctuary. The heaths and sandhills are the natural home of game. Wild fowl in thousands haunt the coast, and only await the chance to make a home in any preserved inland water. The best sporting domains there still maintain a certain value in the real estate market, and the arable land is so light and good that the low prices recently obtained by some Norfolk properties are inexplicable, except on the supposition that the Norfolk farmers' pockets are emptied, and that they can no longer afford to farm their land on the expensive Norfolk system.

Turning to other parts of the coast, for it is by the sea that our ideal paradise should be, a great part of the coast of Wales, and of Somerset, and Devon, from the Quantocks to the boundary of Exmoor, the parts of North Devon by Hartland Point, of Cornwall near the Lizard, and Purbeck Island, all offer physical features favourable for such a reserve; while on the

west coast of Scotland and of South and Western Ireland, the map shows a hundred seacoast sites only waiting to be converted to our purpose. Some of those sites are already the scene of such restorations, partial or complete, varying in kind from the ever-increasing herds of red deer on the Quantocks and Exmoor to the development of an ideal 'paradise' in Lord Powerscourt's extensive and mountainous park at the foot of the Wicklow Mountains, where the red stags of Ireland have interbred with the deer of Japan.

One of the first practical questions to be answered in designing such a 'paradise' is, whether its borders shall be open or fenced. This demands a practical answer, though, as no one would be likely to make such a precinct without sentiment of a kind, the sentimental factor must not be omitted. The following are some of the considerations as they did or do occur to practical people from the Angevin kings down to the present keepers of the deer of Her Majesty Queen Victoria. Those 'single and mighty Nimrods,' the Angevin kings of England, thought it altogether *infra dig.* to inclose a forest. Its limits were always 'unremovable marks, meeres and boundaries, either known by matter of record or else by prescription'; and for keeping the animals there they relied on the 'great coverts of vert for the succour of the said wild

beasts,' and on the privilege or sanctuary given by the law. Here, too, the natural instinct of the beasts of the forest came to their assistance, and as this is a constant factor it must be reckoned among the natural aids to the restoration of a forest. Unless the ground is overstocked, both red and fallow deer and roe, and all game birds, and even wild fowl, prefer to keep as much as possible on the ground where they are preserved. They are not naturally wanderers. Even hares stick to their own preserved ground, and avoid adjacent non-preserved fields as carefully as if they could read the notice boards.

If the Norman rule, to include 'fruitful pastures,'\* and not mere wastes only, be observed, there will be little danger of losing deer for want of fencing. From the owner's point of view, this is very satisfactory. But there is always the chance that his neighbour may look upon unfenced deer as possible trespassers and a source of injury. Roe deer which do stray could scarcely be regarded in this light. They are small and harmless, and their preservation in a reserve would probably lead to a gradual restocking of neighbouring woods with this, perhaps the most beautiful of our native bucks. Something of the kind has taken place in Dorsetshire, where they were re-introduced by Lord

\* 'Fruitful pasture' may be thus explained. It should be ground on which in a good season cattle will grow fat. And they will only grow fat on grass which has somewhere below a clay subsoil,

Dorchester at Milton Abbey in 1800, and spread over a large part of south-west Dorset and Devon. If kept in a central sanctuary they would gradually replenish these old haunts, and their permanent establishment would be simply a matter of preservation.

If, in spite of good pasture, deer or other animals in the paradise insisted on 'lying out,' the experience of the Angevin forest practice is again useful. Each forest had its 'purlieus,' neighbouring ground whence the beasts of the forest were regularly driven in to headquarters, and it was the duty of the ranger to do this. This duty would be transferred to the modern keeper, whose business it would be, on receiving notice, to ride round and drive the beasts back. It is part of the ancient practice of the forest.

The grievances which led to complaints from owners of land adjacent to the forests—one of the first things which a careful owner desires to avoid, and which would possibly be cited as arguments against the re-establishment of a great sanctuary—arose entirely from the overstocking of the Royal Forests with deer. The best case in point is that which led in part to the Deer Removal Act in the New Forest. There the Crown had an unlimited right of increasing the number of deer, and this was exercised, in the late



Georgian and in the beginning of the present reign, with a view, as it was asserted, to diminish the value of the commoners' rights of pasture. In time there were far more deer than could find food on the Crown lands. The average number kept was from three thousand five hundred to five thousand, and in one year it rose to seven thousand. In hard winters they starved, and at all times trespassed on the private land, particularly those manors originally grants from the Crown, such as Brockenhurst and Minestead, which were wholly in the forest. Here is some of the evidence given before the Committee which sat in 1875 :—*Q.* Have you always considered that the depredations upon this property, and the mischief and inroads of the deer, were a great drawback on its condition with respect to its cultivation and improvement? *A.* It has always been considered so, and we have experienced considerable difficulty in letting it, owing to that cause. *Q.* Have you been accustomed to hear great complaints of the damage done by the deer, and the difficulty in preventing it? *A.* Yes, I have. *Q.* In regard to fencing against the deer, is the price of fencing against the deer very considerable? *A.* I should say the price of fencing against the deer was at least double the price of ordinary park fencing; there would not be occasion to provide such an expensive fence except against the deer, but we are

obliged to have a high fence at a great cost. Q. The fence requires to be double the usual height? A. Yes. Q. Is the extent of fencing considerable round Mr ——'s boundary of the forest? A. It extends upwards of three miles. Q. And the repairs of that fence, in order to keep out the deer, are considerable? A. Very considerable; I have always heard it spoken of as an item of large expenditure. Q. Is the principal damage done by the deer in winter and the early part of the spring? A. Yes, during the time that the turnips and other green crops are on the ground, when the deer are driven out of the forest for want of food; there is not so much damage done in the summer.'

This is an exceptional case, stated entirely by the complainants, and we shall have something to say as to the cost of a deer fence later. But it arose solely from this ridiculous overstocking of the forest, and now that the number of the deer is reduced—for they could not be entirely killed off, and have maintained themselves as wild animals—they are among the most popular inhabitants of the district. It is more probable that the chance of finding a few outlying deer or roe would make their establishment in an uninclosed area a source of pride to the country side. Public opinion has changed since the days of Deer Removal Acts, and, sentiment apart, the chance of a hunt after a new wild animal is immensely popular. At a not very distant

date deer had so decreased in the north of Somerset, Exmoor, and the Quantocks, that their very appearance had been forgotten on the south side of the Blackdown Hills by common people. A well-known farmer was aroused from his bed by one of his ploughmen, who had taken his team out on a misty morning, with the news that he had seen the devil in the top field. There was no mistake about it, for he had 'gurt horns and hoofs,' and the man was so frightened that he had left the horses where they were and run home with the news. The farmer agreed that matters looked serious, so he jumped out of bed and into his clothes, took his gun, and, loosing his pointer and spaniel, went out to seek the enemy. He found a fine stag on the hill, and with the aid of his two dogs—not an ideal pack for stag hunting—he followed the deer for several miles across the Devonshire border, and ultimately shot it in a park. This proceeding was naturally objected to; but being a great lawyer, he demonstrated that he had a right to pursue deer 'levant or couchant' which he found on his land with the aid of 'hounds.' The 'hounds' were there in evidence of the fact, and as for the gun, that was no more objectionable than a hunting-knife, and a more merciful weapon. He carried his point with such convincing arguments that he got the loan of the keeper's cart, and brought his deer home before supper time.

The late Mr Austin Corbin, the American 'Railway King,' who created the huge reserve of Corbin Park in New Hampshire, did inclose the whole area of thirty thousand acres with strong wire fencing. As he turned out bison and Wapiti deer, in the laudable effort to retain the two largest of North American animals for the enjoyment of posterity, this was perhaps necessary.

An iron railing three and a half feet high, costing 2s. per yard, forms a sufficient inclosure for cattle and wild Welsh ponies in Lord Wantage's New Park or cattle ranche on the Berkshire Downs. But a cheap and effective fence may be had for deer and antelopes. It is of larch palings, four feet high, with wire netting fixed on the top for a width of three feet six inches. This gives a fence seven feet six inches high, and it would last for twenty years. Its cost is 3s. 6d. per yard. If oak were substituted for larch it would last for a much longer time, but would also be more expensive.

Perhaps the best compromise would be to leave the boundaries of the main sanctuary uninclosed, and to provide within it separate inclosures for such creatures as needed protection, or which it was desired to acquaint with their new surroundings before letting them loose to take their place among the other 'beasts of the forest.' This would also be in accordance with Norman practice. Their forests included both a chase or uninclosed preserve, a park or inclosed preserve, and

a warren. 'A forest doth comprehend in it a chase, a park, and a warren. . . . A chase in one degree is the selfsame thing that a park is, and there is no diversitie between them, save alway that a park is inclosed, and a chase is alway open and not inclosed ; therefore the next in degree to a forest is a liberty of frank chase, and the next in degree unto a frank chase is the liberty and franchise of a free warren.'

The warren, properly managed, should form part of out modern sanctuary, and should be inclosed by a miniature fence exactly like that recommended for deer, but only three feet six inches high. This will form a safe inclosure, not only for the rabbits, but as a first home for any of the minor rodents or small antelopes from abroad, which it might be proposed to enlarge in the open sanctuary later. In addition, the rabbits are a great attraction to all the large hawks and to ravens. Nothing would be more likely to attract and retain such birds as buzzards, marsh-harriers, and, in the autumn, the travelling sea-eagles, as the chance of a 'right of free warren' inside such a sanctuary.

To the combination of forest, chase and warren the modern owner will make an important addition. He will not be content without a lake sanctuary as a home for wild fowl. This will be found to be one of the most satisfactory parts of the reserve. Wild fowl learn by instinct where they can rely on sanctuary, and the



A BLACKHEADED GULL'S NEST. *From a Photograph by R. B. LODGE.*



increase each year, both in numbers and in variety of species, is one of the most delightful results of protection which the eye could desire. Everyone who has seen the fowl on the lake at Holham, where for years not a shot has been fired, would desire such an addition to a paradise.\* In one property now being developed, on which there is no lake, a sheet of water is being formed for the purpose. This is in Norfolk, in a situation very favourable for such an experiment.

Where gregarious birds of special local interest, such as herons, black-headed gulls or terns, breed, their colonies would form a special attraction in the reserve. By arrangement with the county authorities a line of cliff or an area of adjacent sea and estuary might also be annexed to the sanctuary, where the wild shore birds would soon become as tame as the wild ducks upon the lakes. This experiment has been tried, so far as the writer is aware, in one place only, viz., the Scilly Islands, where the protection, though informal, is effectual. The writer is informed that curlew, almost the wildest of wild birds, will feed there like wood-pigeons in the London parks, within ten yards of people standing on the open beach.

When the site of our paradise has been secured,

\* Sir Herbert Maxwell has such a sanctuary on the White Loch of Myrtoun, in the farthest south-west angle of Scotland. Its population increases yearly, and he notes that this year an eared grebe, which had spent the summer and winter of 1895 alone on the lake, found a mate and reared a family.



with the necessary adjuncts of cover, with a lake or pool, natural or artificial, and a warren established, as a food supply for carnivorous birds and the inevitable fox, it will need stocking, or 'replenishing,' as Manwood says. The hawks and wild fowl will stock the woods and lakes of their own accord, and the same may be said of most other species of bird. But the old list of 'beasts of the forest' does not restore itself naturally under any conditions. Of the 'beasts of the forest,' the hart, hind, hare, boar and wolf, and of the 'beasts of the chase,' the buck, doe, fox, marten and roe, only the hare, fox, and in rare places the marten cat, would be found indigenous to the soil. The red deer, wild fallow deer—obtainable from the New Forest—and certainly the roe, should form part of the new population. But modern views on the subject of stocking a sanctuary are wider than those of the Angevin kings. As the world has shrunk, our notions of the possible wild population of a given area expands; and the enterprising owner of a paradise would probably fill it with foreign as well as native animals. Several large proprietors whose tastes lie on the borderland between natural history and sport have already established sanctuaries for this purpose, for the most part in inclosed inland parks. The Duke of Bedford owns a number of foreign deer, and is continually adding to his stock; and the Hon. Walter Rothschild turned out

numbers of kangaroos at Tring, at a time when their speedy extinction in Australia seemed probable.\* The moose deer is also being imported, in order that the experiment of its acclimatisation in Scotch forests may be tried. 'Sir Edmund Loder has hundreds of antelopes, gazelles, foreign deer, kangaroos, and Patagonian hares running loose in his park near Horsham, in Sussex,' writes Mr Albert Jamrach; 'and Mr Christopher Leyland, of Haggerston Castle, in Northumberland, has nylghaus, gazelles, moufflon, kangaroos, yaks and antelopes. Whether financially a sanctuary would be a success I could not tell you, for all these gentlemen keep the creatures from their intense love of animals, and commercial interests do not enter into their calculations at all. This, however, I do know, that some twenty-five years ago my father sold to Lord Powerscourt two pairs of Japanese deer, which have multiplied to such an extent, that not only in his park at Enniskerry are there hundreds of descendants of these two pairs, but that likewise at Muckross Abbey, in Killarney, there are numbers running over the hills, descended from the same stock.' These Japanese stags have also interbred with the red deer and produced hybrids, thus

\* One of these kangaroos escaped into Oxfordshire, and hid itself in a stook of corn sheaves beside which a labourer sat down for his dinner. During the meal the kangaroo bounced out of the stook, and made off in one direction, while the labourer took to flight in the other, not stopping till he reached the next village; he also declared that he had seen the devil.

showing that such a reserve might produce what the original of all paradises produced—new animals.

The following list of the cost of foreign animals suitable for turning out in England may be of service :—

Japanese deer ( <i>Cervus sika</i> ) . . .	£8 to £12 each.
Sambur deer ( <i>Cervus Aristotelis</i> ) . .	£15 to £20 each.
Manchurian deer ( <i>Cervus Manchurius</i> ) .	£12 each.
Wapiti deer ( <i>Cervus Canadensis</i> ) . . .	£25 each.
Virginian deer ( <i>Cariacus Virginianus</i> ) .	£12 each.
Moufflon from Sardinia . . . . .	£25 each.
Barbary sheep ( <i>Ovis tragelaphus</i> ) males .	£10 each.
„ „ females . . . . .	£30 each.

English deer can generally be obtained by private arrangement from the owners of parks. Roe would probably need to be imported from Germany, where they abound in the forests.

The success of Sir Edmund Loder in forming a 'paradise' of foreign animals in Leonardslee Park, near Horsham, is quite astonishing. He has for the most part running loose and wild in a large and wooded park, axis deer, Japanese deer, Indian antelopes, Persian gazelles, Corsican and Algerian moufflon, Scotch hares, great kangaroos and wallabys, prairie dogs, and beavers, Chinese deer, emus, and wild turkeys. The beavers are fenced in a beavers' park of their own, and the



PRAIRIE DOGS. *From Photographs by R. B. LODGE.*



emus have a paddock. The former have made a larger dam across a stream than is commonly seen in North America, and the beaver and prairie dogs' colonies alone must be a constant delight to the owner. The Indian antelopes have bred twice in a single year, a possibility which was not known to naturalists until noted in this Sussex park. At Haggerston Castle, in Northumberland, Mr Christopher Leyland has, among other foreign animals, American bison, which have interbred with Scotch cows, white-tailed gnus, Wapiti and axis deer, and Japanese deer. 'The latter,' he remarks, 'do really well ; a small herd were running with the bison, and were friendly until this year, when the bison hunted the fawns about and killed them.' Mr Leyland has also acclimatised several species of kangaroo ; and the largest of Indian antelopes, the nylghau, thrives and produces young. Unlike the animals in Sir E. G. Loder's park, these are mainly kept in separate inclosures, varying from seventy acres to the size of ordinary pens. It is a 'paradise' in the transition stage, but the results of both these well-managed experiments are as interesting to the public as they must be encouraging to their authors.

## THE PARADISE AT LEONARDSLEE.

LEONARDSLEE Park stands near St Leonards Forest, and about six miles from Horsham. It covers about seven hundred acres of broken, woody ground. Through this 'paradise' I was recently taken by Sir Edmund Loder, and saw the new animals which have made their home in our old country.

An account of this 'perambulation' will probably present a clearer notion of the success of his efforts than any attempt to systematise the results on paper. But there are two conclusions which should be stated here. One is that this is a very 'select' paradise. None but interesting and beautiful creatures have been introduced. Secondly, it is not an 'experiment,' but quite past the experimental stage. The acclimatisation of many of these creatures in this particular area of ground is as much an accomplished fact as the acclimatisation of the fallow deer or the red-legged partridge. As a 'rider' to the last, we

may add that they all produce young regularly, that most of the present stock have been born in the park, and that all run quite wild and free except the beavers, which would destroy too much timber and escape outside the park, some wild sheep, which have an inclosed maze of rocks to live in, some emus and Patagonian hares. There is also an inclosed prairie dog 'town' opposite the library windows in the garden, because they are amusing to watch near at hand. But there are other prairie dogs burrowing out in the open. The park is cut by a deep valley, in which lies a chain of pools connected by a stream. The larger pools are ancient 'Hammer Ponds,' so called from the old iron industry of Sussex. The smaller and upper chain are artificial, but very pretty and charming to walk on, joined by little shining waterfalls and overflows. Above these upper pools, on the side next the house, the whole hillside is planted with thousands of azaleas, and other flowering shrubs, while between them, on the bright spring day of our visit, were every kind of early narcissus, daffodil, polyanthus and hardy spring flowers blooming in the grass. Further down the stream, the steep valley side is covered with trees, fern and furze bushes, and the flat top, some one hundred and twenty feet above the river, is good park herbage. On



this almost the first animals seen were two 'old man' kangaroos. These were very tame, and came hopping up to the keeper, who was putting down food for the prairie dogs, and actually sat up by him and took food from his hand. The keeper went on to busy himself with preparing some other food, and was apparently seen by various herds of animals feeding within sight. A herd of most beautiful Indian antelopes came trotting up. Without counting them, the number would probably be estimated at not less than thirty-five. Many of these had been born at Leonardslee, and all had spent the winter there. In spite of this they were in excellent condition, without a sick one among them. As an instance, both of their good health and of the power of recovery which wounded animals have, Sir Edmund Loder told the following anecdote. A doe antelope broke its hind leg, high up, and the fracture was a 'compound one,'—that is, the bone came through the skin. This is the kind of fracture which Lord Lister, speaking of the days before the antiseptic treatment, said was so dangerous to human life, owing to the risk of blood poisoning, that it would in most cases be really safer to amputate the limb. The injured antelope would have been shot had not its owner observed that it was grazing on three legs, with a good appetite. It was decided to leave its recovery to Nature, and the antelope, though the limb



**AN OLD MAN KANGAROO.** *From a Photograph by R. B. LODGE.*



was still broken, seemed very little the worse. Before the bones were joined in any visible way, it was noticed to swing the damaged leg forward to scratch its ear. In time, the bone set itself somehow, and the piece which had come through the skin was 'reduced,' though the scar remained. This year the antelope had a kid, and suckled it. Apart from the interests of seeing these Indian antelopes running wild under English oaks, the visitor gains a notion of their real appearance which he cannot in a zoological garden. He sees the very peculiar movement of the different species. The antelopes, for instance, when frightened, proceed in a series of extraordinary leaps, not *long* leaps, but high bounds, as if they were shot up like a Jack-in-the-box. The useful purpose of this movement is not obvious. A long leap like that of the kangaroo, which carries him many feet and also enables him to clear fallen timber, is of great service. But this high bound is rather like a series of efforts at jumping over nothing. It was suggested that it was some form of survival from a time when antelopes lived in high grass instead of on plains, an ingenious idea, even if difficult to maintain by reference to ancient conditions. Nothing could be in greater contrast to the movement of these acrobatic antelopes than the quiet, creeping gate of the little reddish-brown Chinese deer, a few of which were stealthily moving along the rabbit runs in the rougher

parts of the valley near the water. The smaller kangeroos and wallabys gave, therefore, a further contrast, both of colour and form. In confinement all these creatures look awkward and slightly comic. On this hillside, as one started them, like hares or rabbits from their 'forms' in the fern, they were very graceful, and as well suited to their surroundings as the deer. They bounded away at a great pace when disturbed, many of them with young ones in their pouches. On the side of the park where we stood the greater number were of the species known as Bennets wallaby. On the opposite side, basking in the sun, were several groups of kangeroos, some fast asleep, and all in elegant attitudes.

Australian naturalists have long maintained that a 'mob' of kangeroos reposing are as pretty as resting deer; and as we watched them through the glass we quite agreed that this description was not over-coloured. Besides the antelopes there were several very pretty Persian gazelles, light coloured and slender, with dark eyes. Some of these were in a small troop alone, others had joined the antelope herd, and one gazelle, being without a looking-glass, was under the impression that he was a Japanese deer, and always kept with them. This herd consists of nearly fifty hinds and stags. As at Powerscourt and Muckross Abbey they are thoroughly acclimatised, and breed freely. Nothing could well have



**A BENNETT WALLABY. *From a Photograph by R. B. LODGE.***



been finer than the rush of these fifty well-set-up dark cobby deer, as they dashed past us up the hillside and disappeared in a pine grove. We 'stalked' these deer more than once to admire their numbers and condition.

On one of our stalks we were interrupted by disturbing a large flock of American wild turkeys, which ran before us through the trees. The gobblers, all bronze and lustre, looked very fine, and the whole flock was very strong and healthy. These birds when running wild differ considerably in appearance from the black domestic turkey. This was a Cuban variety; and though the hen birds retain their wild form, there is a considerable change from elegance to obesity in the domestic gobbler. Last year it was proposed to treat the wild turkeys as game, and shoot them. But they all flew up into the trees. At this point the scene was singularly interesting. Below us lay the shining pools in the valley, one of them formed by the beavers, whose dam was plainly visible. The beavers' co-patriots, the wild turkeys, were running before us. On the right was the herd of deer from Japan; and further along the ridge a most beautiful group of moufflon, the wild sheep of the mountains of Corsica and Sardinia. The troop looked very fine, with curling horns, long fleeces, and big white saddle-like marks on their backs. They were wild enough, for they galloped round a kind of high shelter of faggots and disappeared among the



trees, the rams leading and the kids going full speed by the side of their mothers.

A few animals are kept in inclosures on a warm slope opposite the house. Patagonian hares and emus were the only inmates visible. The latter are noticed to lay one most beautiful egg, of a pale green colour, like that of Corinthian bronze, in the early clutches of eggs, this pale one being usually the first egg laid in the season. One is set on the top of an elephant's skull in the museum at Leonardslee, where it has a very good effect. None of these animals at Leonardslee have been in the park more than seven years. But in that short time animals, beautiful, interesting, and in many cases as good for food as any other game, have been introduced, have lived through our changes of season, and have perpetuated their kind. They came from the most distant and divergent regions. China and Japan contribute deer, India antelopes, Persia gazelles, North America the beaver, the turkey and the prairie dog, Australia kangaroos, and Corsica the moufflon.

Judgment in selection and cleverness in management during the early days of introduction to the park must account for a great part of the owner's success. It is rather interesting to compare the animals acclimatised at Leonardslee with the plants acclimatised there and elsewhere in this country. In the 'wild garden'

at Leonardslee, for example, one sees plenty of flowers and shrubs from Japan, from China, and from North America, and in the 'rock garden' (which is one of the best in England) are plants common in the regions where the mountain-haunting moufflon abides. North American plants are also numerous, and though we have few from Australia, it is well known that in that continent kangaroos will live in great varieties of climates. But plants from the Indian plains do not flourish in British gardens ; and it was a stroke of genius in the owner of Leonardslee to divine that the Indian antelope would flourish here. It not only did flourish, but it was at Leonardslee that the discovery was first made that these antelopes have two fawns in twelve months.

## A BEAVER LAKE IN SUSSEX

LEONARDSLEE Park, where the 'paradise' referred to in the preceding chapters has been established, is divided by a deep, wooded valley, in which a stream forms a series of pools, increasing in size to small lakes. In one of the connecting lengths of the brook is a beaver colony, in which the method and practice of beaver engineering are shown in as high perfection as in any North American stream. Though they have only been established there for some seven years, they have entirely changed the character and appearance of the ground which they occupy, in accordance with the established order of beaver life. All their work has been open to observation, and, in the process by which the Leonardslee beavers have created the conditions necessary to their existence, the gradual evolution of those perfect beaver villages which struck the first settlers in

North America with such natural astonishment has been traced step by step.

Their first object was to form in the running stream a pool, with water maintained at a constant height, sufficiently deep to keep the entrance to their burrow in the bank submerged during the drougths of summer, and to obviate any danger of a thickness of ice so great as to prevent their swimming freely beneath it in winter. To this end the beavers built a dam, which those who have visited their surviving homes in Canada pronounce to be as good a specimen of their work as can be seen even there. Its situation was carefully chosen. A small oak, growing on what appears to have been a projection of the bank or an island in the brook, gives indirect support to the centre of the work. It may be concluded that this was part of their intention; for though they have cut down every other tree in their inclosure to which they had access, except two or three very large ones, they have left this small tree untouched. Above this stretches the dam, now some twelve yards wide, and rising about five and a half feet from the base to the crest. It is solidly built of battens of alder, willow, larch, and other straight-limbed trees, cut into lengths of from two feet to four feet. The bark of each

was carefully gnawed off for food, and the whole work, constructed of these cut and peeled logs, has a very regular and 'artificial' appearance. Smaller twigs and sticks are jammed in between the battens, and the interstices are stuffed and plastered with mud, which the beavers bring up from the bottom of the pool in their mouths, and push in with feet and noses, making the whole structure as watertight as a wall. The dam has converted the stream above into a long pool, overflowing the original banks, and five feet deep at the lower end. Here, then, was the beaverlake, the vestibule to the beaver home. The early settlers and trappers, and the writers who copied and illustrated their accounts, wrongly credited the beavers with as much art in the building of their 'lodges' as they justly attributed to them for the construction of their dams. They were usually represented as domed houses surrounded by water, and one illustrator depicted the lodges as pierced with a neat row of windows. Later naturalists declared that the beaver only burrows in the bank like a water-rat, and makes a chamber at the end. But there was evidence to show that the lodges could scarcely be a myth, and the common consent by which they were described as surrounded by water was rather difficult to



A BEAVERS' DAM AT LEONARDSLEE. *From a Photograph by Sir E. G. LODER, Bart.*



explain away. It was surmised that the beavers began by making a burrow, and in time converted this into a lodge. The annals of Sir Edmund Loder's colony afford the first reliable evidence that this surmise is correct, and will in all probability show how the riparian residence in time becomes lacustrine. The beavers dug a burrow, into which they constantly carry fresh dry chips to make a bed. Unlike the prairie dogs, they do not throw their old bed away, but simply cover it with fresh chips. As the chamber floor rises, they scratch away the ceiling to gain more room until they make a hole in the roof. Over this they lay sticks and cover them with mud. At first only a few sticks showed the top of the lodge. But to make head room they have gradually enlarged the roof till it has risen into a distinct dome some two feet high, and the process must continue so long as the layer of chips rises below.

The surrounding of this lodge with water *may* take place in the following manner. Every year the beavers add to the height of their dam. This is not, or is only in part, the result of beaver conscience, which keeps them uneasy unless they have some work to do. The stream in winter brings down a quantity of mud into the pool, which tends to grow shallower. Therefore to keep up the



depth of water the dam must be raised in the spring. This again raises the height of the water-line, and floods the banks laterally. Already the fence round their lake has had to be moved back and enlarged on this account. Consequently, in time, the ground in which the burrow and lodge are made may be flooded, and the lodge will again be raised, and be completely surrounded by water. The growth and expansion of such engineering works as these dams, made necessary by silting, and the inevitable annual raising and widening of the dam, is naturally provided for by the increase of the beaver colony. The young beavers are early set to work at 'light jobs.' When wild, beavers also work up stream, and make other subsidiary dams to lessen the rush of floods. At Leonardslee the beavers have young ones, though the whole number at present in the colony is only five, but they are prevented from wandering up the valley by a low, corrugated iron fence round the inclosure, with gratings across the stream. The fence, though not beautiful, serves a useful purpose. It is a complete screen to the beavers when at work, and to anyone observing them from without. Occasionally one burrows underneath it, and travels up the stream, moving on from one pool to another. On the banks are still visible the amusing records of a beaver's

'night out'. It had hardly travelled fifty yards before its conscience suggested that it ought to get to work. It selected a very big tree, a Scotch fir about eighteen inches through, cut a broad belt of bark off half-way round, and then gave up. It then went up the valley until it found a nice young birch tree, six inches thick. This suited very well. It cut it down, and next morning it was found lying across the path. The stump and chips still remain.

Everyone who has kept wild animals, even without establishing them in natural conditions, knows how much attention to detail is needed for success. As a minor instance of the cleverness which presides over the doings of the Leonardslee animals, we may cite the means by which wandering beavers are caught. A box trap, open but not set, is kept in their inclosure. In it a piece of dog biscuit is put daily, which the beavers scramble for. When one gets out, the trap is set by the stream, and the beaver, who misses his morning biscuit, soon smells it, walks into the trap, and is caught.

In conclusion, we may point to evidence on the spot of the engineering skill of the beavers, and their grasp of 'principles'. Higher up their owner has formed many small pools, stocked with trout and separated by short lengths of running water, cascades, and rushy ground. Some of these pools are no

larger than that made by the beavers, yet the dams were constantly broken by floods. The stone outfalls were carried away, the heavy blocks carried into the next pool, and the earthen dams cut by the water. This is now prevented by ingenious wooden outfalls, with parallel cuts for flood overflow. The beaver dam, made of 'wattle and dab,' and carefully kept level along the top, allows the floods to run over it without damage. The whole scene and its setting is a complete and beautiful object lesson in one of the most attractive pages of natural history.

## THE JAPANESE DEER AT POWERSCOURT

THE earliest complete success in acclimatising the larger wild animals from abroad in the British Islands was achieved by Lord Powerscourt, when thirty-seven years ago he established the Japanese deer in the Wicklow Mountains. Briefly speaking, from three females and a stag procured in 1860 he has stocked his own park with a herd of a hundred head, and given away or sold a number every year besides. Flourishing colonies have been established at Muckross Abbey, at Glenstal, in Lord Annesley's park, and in the late Sir Victor Brooke's park at Colbrook. At Powerscourt the Japanese stags have also interbred with the indigenous red deer, and produced what is practically a new species. Wapiti and sambur deer were also introduced in the early days of the experiment ; but the Japanese alone took naturally to their new quarters. 'The sambur deer never would come out of the thickets in the daytime. They unfortunately could not be taught that Ireland has not

a tropical climate,' wrote Lord Powerscourt in the proceedings of the Zoological Society, 'and they used to skulk in the thickest cover they could find, *out of the sun*, all day, and only came out to feed at night, as they would in the jungles of Mysore, where I have seen them pursuing the same tactics. Of course, by this unnecessary precaution, they got chilled through, and eventually died.' This is, perhaps, as good an instance as could be quoted of the slight differences in habit which may lurk in the way of successfully introducing foreign species to this country, where the climate conditions are so unstable as to upset all the inherited instincts of creatures living in lands where weather is 'constant.' But climate is not the only element in the success of this experiment. The natural features of the deer park at Powerscourt are so wild and beautiful that any detailed description gives an imperfect notion of the setting of the scene. It is a 'Yellowstone Park' in miniature—a deep valley cut by the river through the Wicklow Mountains, widening in the centre of the park into an amphitheatre, with steep wooded slopes, in places almost vertical. Over this lofty wall a tributary stream pours in a descent of three hundred and seventy feet, in which the gathered waters of the mountain above are converted almost instantaneously on leaving the summit into clouds, not of mere vapour tossed by the wind as in the falls of

the Norway cliffs, but of white water falling through space, impinging from moment to moment on the smooth rock faces, and thence descending like a thing imponderable, half air, half water, to the rocky basin beneath. On either side, far up the mountain, oak climbs above oak, and birch above birch, dappling the steep with a mist of grey or purple, as the specific forms of either tree are lost to sight. Below, smooth lawns of moss, close-cropped by deer till they look like bright green velvet, complete the contrast between the vertical and horizontal lines of landscape. Above and beyond the inner rim of the valley wall lie the misty tops of the mountains, and from side to side of the great cup, and on the lawns by the river, the deer wander at will, shifting to different parts of the valley as abundance of food or changes in the weather influence their choice.

To the deer, as to any visitor to the valley, the central attraction is the neighbourhood of the great waterfall; and whether grazing along the edge of the heights above, or on the lawns below, it is there that the main body of the wild inhabitants of the park are found. Though their surroundings are so wild and mountainous, the greater number of the Powerscourt deer are singularly tame. They have been taught to assemble at the sound of a horn, and at this summons red deer, Japanese hinds and stags, and the mixed

progeny of both, together with the fallow bucks and does, gather from the woods and valley, and hurry to the pasture by the fall. At the time of the writer's visit, a number of all these species were in sight, feeding by the river, but many more were invisible among the woods and on the hill. At the first blast of the horn those in the open threw up their heads and trotted towards the keeper, over whose shoulder was slung a heavy bag of maize. At the second and third, other deer, singly or in pairs, or in companies of three or four, were seen cantering down the hillsides, trotting out from the oak woods, or crossing the river to join the feast. Others appeared against the sky far above on the mountain rim, and after a glance over into the valley, plunged into the woods and descended. In a few minutes several score of deer were feeding in a ring, their visitors being in the centre, the whole company delicately picking up the maize corn from the green tablecloth of moss. The guests at this late breakfast-party were of all kinds, ages and sexes—red deer, stags and hinds, fallow bucks, fawns and does, Japanese stags and hinds, and hybrids between the Japanese and red deer. Only one important member of several herds was absent, a hybrid stag, which, with the wildness and independence which these are found to exhibit in a marked degree, refused to leave the hills and eat the maize of indolence. Apart from the interest attaching

to the presence of so many animals from the opposite verge of the Old World, as thoroughly acclimatised in thirty years as were the fallow deer after the lapse of sixteen centuries, the sight was singularly attractive. As the maize became scarcer the deer came close to the keeper, asking for more. A red deer stag almost thrust his muzzle into the bag, while some of the fat and well-liking Japanese hinds, with thick mouse-coloured coats, almost black upon the back, and dappled with a kind of warm 'wash,' which gives to their coats a look of depth and lustre uncommon in the deer tribe, were actually eating from their owner's hand. A fierce-looking little Japanese stag, carrying his head well, with none of the 'ewe-necked' look of a fallow buck, but rather with the pose of a sambur, and another stag of the same breed, whose horns had been sawn off as a discouragement to fighting, were thrusting their way through a crowd of fallow does, closely followed by some hybrid hinds, which, except in being somewhat larger than the original Japanese, take after the Eastern rather than the Western stock. The immediate background of this picture was the moss carpet, set with oaks, thorns and bits of craggy rock, surrounded on three sides by the rushing river and the 'sound of many waters.' Far the fattest and best in condition were the acclimatised 'Japs' and their half-bred descendants. Even more curious is the fact that the latter are the master stags of the glen.



It may be that in this case, as often happens, the hybrid is especially pugnacious, but the pure-bred Japanese are very courageous. Of the fact of their victory over the big red stags there is no doubt at all. A red stag, with eight hinds, was seen passing near the head of the waterfall, when a Japanese stag sprang out and approached him in a series of leaps,—not the recognised manner of approach in a duel between English deer. The native stag ran off without a fight, and the Japanese annexed his hinds. A hybrid stag killed one of the largest red stags in the park. The latter was 'going back' in condition, and it was decided to shoot it. Almost the first thing discovered by those who were seeking this stag was the animal itself, lying perfectly dead, by a bathing-pool frequented by the deer. The ground was much cut up by deer's feet, and the wound which had killed the big stag was a thrust of an antler penetrating below one eye, passing through the brain, and out at the other eye. The hybrid stag was suspected of being the murderer and was shot next day, when the point of one of its horns was found to be covered with blood. These horns are now at Powerscourt, and are most formidable weapons. They resemble those of the red deer rather than the Asiatic type, having brown antlers and exceedingly sharp points as a finish to a stabbing curve exactly like that of the Goorkha knife. But, from the human point of view, the

Japanese deer and their mixed progeny are a charming addition to the inhabitants of an English park or forest, and anyone who sees them will agree with the summary given by Lord Powerscourt in 1884, after a twenty years' trial of their merits:—'The Japanese are a most satisfactory little deer ; the venison, when dressed, is about the size of Welsh mutton, and very well flavoured. The little stags, with their black coats and thick necks, like miniature sambur deer, are very picturesque and ornamental, and I think they are a decided addition to our varieties of hardy park deer.'

THE END





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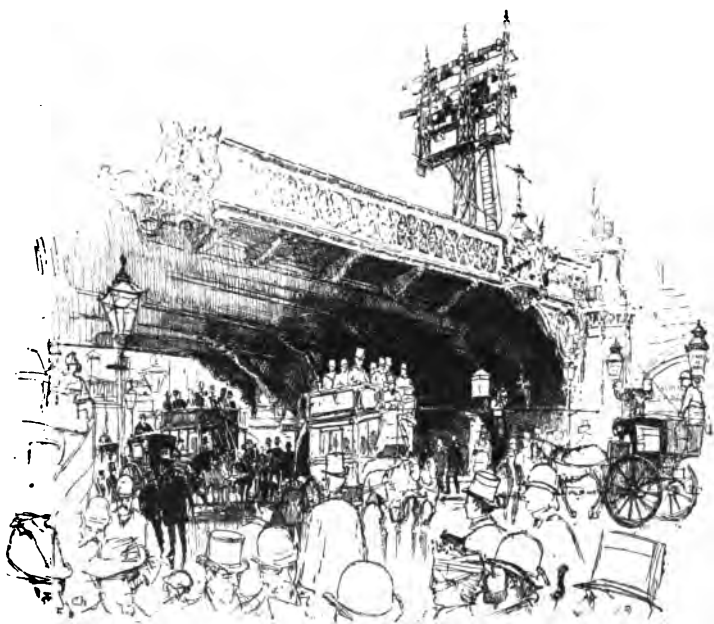
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